SI 588: Fundamentals of Human Behavior

University of Michigan School of Information
Fall 2013

Designing effective interactive systems requires understanding the needs and capabilities of the people who will be using them. In this course we will examine human capabilities and behavior as they relate to the design of interactive information systems. We will survey contemporary theories and findings from the social sciences (especially psychology), with special attention to how these concepts influence the way we design for human interaction.

Course Sections

Section 001
Tuesdays @ 8:30 am – 11:30 am
2255 North Quad
Primary Instructor: Lorraine Buis

Section 002
Thursdays @ 1:00 pm – 4:00 pm
1255 North Quad
Primary Instructor: Lionel Robert

Instructors and Communication Information

**Lionel Robert**, Assistant Professor, School of Information (Instructor)
Office: 4417 N Quad
Phone: (734) 764-5296
Email: lprobert@umich.edu, si588-instructors@umich.edu
Office Hours: Thursday 10:10am – 12:10pm

**Lorraine Buis**, Assistant Professor, Department of Family Medicine (Instructor)
Office: 1018 Fuller St., Room I3009
Phone: (734) 998-7120 ext. 312
Email: buisl@umich.edu, si588-instructors@umich.edu
Office Hours: Tuesday 1:00 pm – 3:00 pm

**Manchul Han**, PhD Student (Graduate Student Instructor)
Office: 4352 N Quad
Phone: 734-489-5865
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Office Hours: Thursday 4:00 pm - 6:00pm

**Krishna Vadrevu**, MSI Student (Graduate Student Instructor)
Office: 4352 N Quad
Please note that si588-instructors@umich.edu is the alias e-mail for all instructors, preferred for all official course business and/or questions that require a quick response.

For all course communication via email, please include SI 588 in the subject heading. We will do our best to respond in a timely fashion, but please allow up to 48 hours for us to respond.

Learning Goals

After taking this class, students will be able to:

- Identify key features of human behavior and describe their impact the design of interactive systems.
- Critique and design interactive systems on the basis of knowledge of human capabilities and behavior.
- Describe themes from the research literature in social science and human-computer interaction as they relate to interactive system design.

Class Meetings

The class meets on Tuesday mornings from 8:30 am – 11:30 am (Section 1) and Thursday afternoons 1:00 – 4:00 pm (Section 2). The first class meetings will be on Tuesday September 3rd and Thursday September 5th, respectively. The final class meetings will be on Tuesday December 3rd and Thursday, December 5th, respectively. There will be no meetings or exams during the exam period, but note that the Module 3 Reflections Paper is due after the last class meeting.

Assignments and Grading

There are four different types of work in 588.

1. **Weekly group assignments (20%)**: In assigned groups of 3-4, you will complete a short assignment during class time that allows you to apply the knowledge relevant to that week’s topic. Groups will be randomly assigned at the beginning of each module and will stay together throughout that module. The deliverable for each assignment will be a posting to the course website,
with specific criteria for the posting to be determined on a per-assignment basis. The GSI for each section will give a 10 minute in-class presentation to provide feedback on the previous week’s assignment.

2. **Comments (10%)**: You are expected to comment on two other groups' postings each week. The comments should be thoughtful but need not be lengthy. Full credit can be attained by providing comments each week. Extra credit will be awarded for exceptionally thoughtful and productive comments.

3. **Exams (35%)**: At the end of each module, you will complete a take-home exam. Exams will be open-book/browser and focused on testing knowledge, comprehension, and application of course concepts. Exams are to be completed individually, without collaborating with or discussing answers with classmates.

4. **Reflections Papers (35%)**: At the end of each module, you will complete a reflections paper. Additional details about the reflections papers can be found in the CTools Assignments. Your grade for this class component will be an average of the two best scores out of the total three you will receive for your papers.

### Assignment Due Dates

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<thead>
<tr>
<th>Assignment</th>
<th>Available</th>
<th>Due</th>
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<tr>
<td>Module 1 Exam</td>
<td>10/4, 9:00 am</td>
<td>Friday 10/11, 5:00 pm</td>
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<td>Module 1 Reflections</td>
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<td>Friday 10/18, 5:00 pm</td>
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<td>Module 2 Exam</td>
<td>11/1, 9:00 am</td>
<td>Friday 11/8, 5:00 pm</td>
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<td>Module 2 Reflections</td>
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<td>Friday 11/15, 5:00 pm</td>
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<td>Module 3 Exam</td>
<td>11/22, 9:00 am</td>
<td>Monday 12/2, 5:00 pm</td>
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<td>Module 3 Reflections</td>
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<td>Friday 12/13, 5:00 pm</td>
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Weekly Group Assignments are due each week by 11:59 pm the day of class (normally you should complete them within the class period but the extra time is for finishing up details if you wish).

Comments are due each week by 11:59 pm on the **day before** the following class (Monday night for Section 001 and Wednesday night for Section 002).
Missed and Late Assignments

Things come up. We understand that not everyone will be able to make it to class every week and there may be reasons why an assignment needs to be turned in a bit late. Here are the policies regarding absence and lateness:

In-class Assignments and Comments

- You must be present in class for the entirety of the in-class group work time to receive credit for that week's in-class assignment.

- You can miss up to two in-class assignments and up to two weeks of comments with no penalty. Each missed assignment and/or comment beyond that results in a 10% penalty against the relevant grade.

- If more than two absences are required for legitimate reasons*, you must notify the instructors by email before class and explain the reasons for each absence (including the previous two).

Homework Assignments

- Late assignments will be assessed a 10% penalty for each day that they are late. There is a 15 minute grace period after the initial deadline to account for possible technical issues such as word processor malfunctions or CTools slowness.

- **No assignments will be accepted after 48 hours past the deadline.** This is to allow the instructors to release the answer key at the end of the next class should they so desire.

- To spell it out:
  - Before the deadline: No penalty
  - 0:16-24:00 hours after the deadline: 10% off
  - 24:01 – 48:00 hours after the deadline: 20% off
  - After 48:01 hours: No credit

- If an extension is required for legitimate reasons*, you must make your request to the instructors by email at least 8 hours before the deadline.

* "Legitimate reasons" for absence and lateness include illness, family emergencies, job duties, and significant emotional distress. The legitimacy of each specific instance is at the discretion of the instructor. "Legitimate reasons" do not include excessive course-related or extracurricular work--you are required to plan ahead to meet your deadlines in all classes.
Readings

There is one required text for this class.


The book can be purchased online or at area bookstores. It is also available electronically [Safari Books](#) or through [Science Direct](#) (recommended), both of which can be accessed through the UM Library website. If you are off campus, you may need to connect to Safari and/or other publisher sites (e.g., the ACM Digital Library). This can be done using the [MLibrary Proxy Server Bookmarklet](#).

Other readings will be made available as PDFs via CTools or directly from publishers’ or authors’ websites.

Laptops and Other Devices

You are encouraged to bring laptops and/or other net-connected devices to class. Indeed most of the in-class assignments will assume that at least one group member, if not all, have such a device. However, such devices bring with them temptations that are not always conducive to a positive learning environment.

While we have no intention or, indeed, means to enforce this policy, the official policy of this course is that net-connected devices should not be used for non-class-related activities (e.g., personal email, game playing, web browsing, Twittering, Facebooking, Pintersting, etc.) during class time. Engaging in such activities not only distracts you from participating in class and absorbing the material, it can also distract others around you and degrade the overall focus and quality of the class meetings. Please don't do it.

Collaboration and Original Work

Collaboration

We strongly encourage collaboration while discussing and interpreting the readings. Active learning is effective. Collaboration will be especially valuable in summarizing the reading materials and picking out the key concepts. For the exams, however, you may not discuss the answers to the questions with any other members of the class. If you have clarification questions, please direct them to the instructors. See the Rackham Graduate policy on Academic and Professional Integrity for policies related to Cheating or Obtaining an Improper Advantage.

Your ideas for your term paper can be discussed with other members of the class,
however direct collaboration is not permitted. Your experiences, critique, and analysis must all be your own, though you may use ideas that emerged from group discussions. Any such ideas that you used should be acknowledged in your final report and credited to the individual(s) who helped you come up with them.

**Plagiarism**

All written submissions must be your own, original work. Original work for narrative questions is not mere paraphrasing of someone else’s completed answer: you must not share written answers with each other at all. At most, you should be working from notes you took while participating in a study session.

You may incorporate selected excerpts from publications by other authors, but they must be clearly marked as quotations and must be attributed. If you build on the ideas of prior authors, you must cite their work. You may obtain copyediting assistance, and you may discuss your ideas with others, but all substantive writing and ideas must be your own, or be explicitly attributed to another. See the Rackham Graduate policy on Academic and Professional Integrity for the definition of plagiarism, and associated consequences.

In this course, an assignment containing plagiarised material will receive a grade of zero (0%). This applies whether the plagiarism is intentional or inadvertent. If you are unsure about whether a passage in your writing constitutes plagiarism, you are encouraged to seek help from the course instructors, or from the Sweetland Writing Center. Be sure to plan sufficiently ahead in your writing so that you can receive and incorporate feedback if you are uncertain about the boundaries of plagiarism.

**Accommodations for Students with Disabilities**

If you think you need an accommodation for a disability, please let your instructor know at your earliest convenience. Some aspects of this course, the assignments, the in-class activities, and the way we teach may be modified to facilitate your participation and progress. As soon as you make us aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help determine appropriate accommodations. SSD (734-763-3000; http://ssd.umich.edu/) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. We will treat any information you provide as private and confidential.
# Schedule and Readings

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<th>Module</th>
<th>Tues. Section</th>
<th>Thurs. Section</th>
<th>Topic</th>
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<th>Readings</th>
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▪ We will re-read these pages later, for now focus on pp. 121-122 and gaining a basic understanding of the concepts of attention, perception, short term memory, and long term memory.
▪ Note: We also recommend reading the Wikipedia entry for "Information Processing Theory." It is both incomplete and over-complete, but it is useful for introducing some historical context and pointing out the all-important "human as computer" metaphor that underlies information processing theory.
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<th>Module</th>
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▪ Ch. 2: Our Vision is Optimized to See Structure  
▪ Ch. 3: We Seek and Use Visual Structure  
▪ Ch. 5: Our Color Vision is Limited  
▪ Ch. 6: Our Peripheral Vision is Poor |
▪ Ch. 1: We Perceive What We Expect  
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<th>Thurs. Section</th>
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</table>
   ‣  Only read "Learning Curves" (p. 155-6), "Forgetting Curve" (p. 157), "Levels of Processing" (p.164-5), "Recognition, Recall, and Retrieval" (p. 165-6), and "Transfer of Training and Interference" (p. 166-7)  
   ‣  Ch. 7: Our Attention is Limited, Our Memory is Imperfect  
   ‣  Ch. 9: Recognition is Easy, Recall is Hard  
   ‣  Only read "1. Introduction" and "5. Psychomotor differences and skill acquisition" |
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  ▪ Ch. 8: Limits on Attention Shape Thought and Action |
<p>| 10-15  | 10-17         |                | NO CLASS – STUDY WEEK | Module 1 Reflections Due 10-18 at 5:00 pm | NO CLASS – STUDY WEEK |</p>
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<td>10-29</td>
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<td>8 Communication</td>
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<td>• Monk, A. 2003. Common Ground in Electronically Mediated Communication:</td>
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<td>Clark’s Theory of Language Use. In J. M. Carroll (Ed.) *HCI models,</td>
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<td>theories, and frameworks: Toward a multidisciplinary science*. Morgan</td>
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<td>Kaufmann. San Francisco, CA. pp. 265-283 (Stop at 10.5.2). [Available in</td>
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<td>• Reeves, S. and Nass, 2002. C. Ch 1, The Media Equation &amp; Ch. 2,</td>
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<td>Politeness. *The Media Equation: How People Treat Computers, Television,</td>
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<td>and New Media Like Real People and Places*. Center for the Study of</td>
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<td>Language and Information. pp. 3-36. [Available in Resources]</td>
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<td>• Cooper, A. Reimann, R., and Cronin, D. Ch. 12: Designing Good Behavior.</td>
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<td>In <em>About Face: The Essentials of Interaction Design</em>. Wiley Publishing,</td>
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<td>Inc. pp. 249-259 (stop at end of 259). [Available in Resources]</td>
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<td>• Johnson, J. 2010. Designing with the Mind in Mind: Simple Guide to</td>
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<td>Understanding User Interface Design Rules. Morgan Kaufmann, San Francisco,</td>
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<td>• Ch. 12 We Have Timing Requirements</td>
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<td><strong>Week 10 preview by Dr. Robert</strong></td>
<td>of cognition. <em>Annual Review of Psychology</em>, 44. pp. 585-612. [Available</td>
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<td>Module 2 Exam Due 11-7 at</td>
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<td>• Crumlish, C. and Malone, E. 2009. <em>Designing Social Interfaces</em>. O'Reilly</td>
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<td>• Chapter 4: Where's the Rest of Me?</td>
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<td>• Chapter 5: We Are Here! We Are Here! We Are Here!</td>
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<td>• Chapter 6: Would You Buy a Used Car from This Person?</td>
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| 3      | 11-12         | 11-14          | 10 Distributed Cognition / Situated Action **Week 11 Preview by Dr. Buis** | Module 2 Reflections Due 11-14 at 5:00 pm | ▪ Perry, M. 2003. Distributed Cognition. In J. M. Carroll (Ed.) *HCI models, theories, and frameworks: Toward a multidisciplinary science*. Morgan Kaufmann. San Francisco, CA. [Available in Resources]  
▪ Ch. 1 Living with Technology [Available in Resources]  
▪ Ch. 4 The Threads of Experience [Available in Resources]  
▪ Ch. 6 An Online Shopping Experience [Available in Resources] |
| 11-26  | 11-28        |                |       |          | NO CLASS (THANKSGIVING) |
| 12-10  | 12-12         |                |       |          | ▪  |

### Module 2 Reflections Due 11-14 at 5:00 pm

### Module 3 Exam Due 12-2 at 5:00 pm