

# I300: HUMAN-COMPUTER INTERACTION DESIGN

Summer Session I (May 12th-June 18th)

## **Logistics:**

**Meeting Location:** Informatics East 130

**Meeting Times:** Tues, Weds, Thurs 10:20 AM-12:25PM

**Instructor:** William Ryan (wnryan@indiana.edu)

**Office Hours:** Informatics East Lobby (M, W 12:30-2:30)

**AI:** Sean Connolly (seaconno@indiana.edu)

**Office Hours:** Informatics East Lobby (H 12:30-2:30)

**Blog Website:** [www.wordpress.com](http://www.wordpress.com)

## **Course Aims and Objectives:**

Human-Computer Interaction Design will introduce Informatics undergraduates to the fields of Human-Computer Interaction and Design. Human-Computer Interaction Design focuses on the use of computing technology. From this perspective, we can fit technologies into users' current practices more effectively and can extend their cognitive capabilities by providing new experiences for them through our designs. The course will introduce you to the design process that accompanies software development. The course is split across two main activities of interaction designers, the practitioners of the field. The first activity deals with the design of software and hardware technology and the relation of our designs to the user. Examples of design include investigating software users, developing prototypes, and designing your design process. The second important activity is evaluation of the generated designs. Examples of evaluation include usability studies and field studies.

I hope that over the course of the semester you will gain a new understanding and appreciation for the users of your software. This appreciation then can be used to help generate design insight. This course is intended primarily for students wishing to become designers of interactive software and media; however, it is also applicable for students who wish to learn more about the user of software that they develop. The course will focus on design activities including design and concept generation, argument building, critique, user modeling, low fidelity prototyping, and so forth.

*What to expect from the course:*

As a summer course, this course may feel fast paced. We will be trying to cover an entire semester's material in less than half the time. I will adjust the pace of the class to the overall class, but I expect you all to keep up with the readings and give honest attempts on the work in class and outside of the class. Your expected workload outside of class will be approximately 60-70 pages of reading per week, reading responses, and one final design project. In-class workload includes participation in activities and discussions and one midterm examination over the course material. If you make an honest effort in the class, it *will* pay off.

I will use a variety of methods to help engage you with the material. The class is structured with a lecture for that week's readings' topics, but we will often break up for an in-class activity based on the lecture and readings. These in-class activities will include design problems, critiques of actual computer software systems, opportunities to practice evaluation techniques, or discussions of the material. In the last 10-15 minutes of class, I will review what we discussed in class that day, provide motivation for the topic we will discuss in the next class, and administer a "minute paper" based on class that day. The "minute paper" will be a short paper that will describe the most important thing that you learned in class that day and what questions remain to be answered.

*Learning Objectives:*

By the end of this course, you will:

- Be able to critically evaluate designs of all kinds.
- Be able to participate in the process of design as well as integrate design into a software development process.
- Be able to construct a well-reasoned argument supporting decisions in a design process.
- Be able to identify what tools and techniques exist for interaction designers to scaffold the process of design as well as their limitations.
- Be able to balance values, needs, and requirements from multiple stakeholders in a design project and generate a list of viable and innovative concepts that fit the design space.
- Be able to collect information from potential users that give evidence to what user's needs are as well as how potential designs could fit into their daily habits.
- Be able to conduct basic usability studies and field tests that evaluate a prototype as a proof of concept.

## Course Text

Preece, J., Roger, Y., & Sharpe, H. (2007). *Interaction Design: Beyond Human-Computer Interaction*. John Wiley & Sons, Inc. New York.

*We will also have a selection of readings that I will provide online from:*

Harper, R., Rodden, T., Rogers, Y., & Sellen, A. (Eds.) (2008). *Being Human: Human-Computer Interaction in the Year 2020*. Cambridge: Microsoft Research Ltd.

Kolko, J. (2007). *Thoughts on Interaction Design*. Savannah, GA: Brown Bear LLC. Available at: [://www.thoughtsoninteraction.com/index.html](http://www.thoughtsoninteraction.com/index.html).

Buxton, B. (2007). *Sketching User Experiences*. San Francisco, CA: Morgan Kaufmann.

## Course Policies

### *Classroom Policies*

You all are expected to show up on time to every class. Attendance is extremely important because in-class activities are invaluable for achieving your goals for the course.

Furthermore, the activities will be practice for some of the material that we will have on the test and for the final project.

Attendance will be taken for each class. Absences due to illness, religious observation, and certain family emergencies will be excused if you provide prior notification and proper documentation (e.g., a doctor's note). All other absences are unexcused. If you need to miss a class, please notify me one week in advance when possible. If you miss the test, you will be given an opportunity to take a substitute test. You must notify me by the following class or you will receive a zero for the test.

### *Academic Integrity*

You are expected to submit your *own* work for reading response, projects, and exams; however, finding other sources that support claims or design decisions that you are making are perfectly reasonable activities as long as you properly cite the source that you are using. If you do bring in other sources, you are expected to add your own insights in addition to the text, diagrams, or designs that you incorporate into your design. You are encouraged to consult with your classmates as you work on the assignments and evaluations (collaborations and cheating on exams will result in failure for all parties involved), but you are expected to turn in your own original work for each assignment.

If you would like to review your rights and responsibilities as set out by the university, please visit [://dsa.indiana.edu/Code/](http://dsa.indiana.edu/Code/). Cases of academic misconduct will lead to disciplinary actions including failure of the test or assignment, failure of the course, or

university level disciplinary action depending on the severity and intention of the misconduct.

### *Accommodations for Religious Observation*

If you need to miss class for the religious observation, please notify me in advance. It is your responsibility to obtain class notes from other students. Students who miss exams or graded in-class activities as a result of their participation in a religious observation or school excused activity will be allowed to complete these substitute activities on an alternative date.

## **Grading**

### ***I. Attendance (10%)***

### ***II. Participation (10%)***

Success in this course requires being an active participant in the course. Attendance will be collected by participation in the “minute” papers described above. Participation can range from participating in group discussion, participating in group activities, thoughtfully reasoned “minute papers,” commenting on other people’s blogs (described below), or generally showing your engagement beyond attendance (e.g., visiting during office hours).

### ***III. Readings & Responses (15%)***

Readings will be drawn from the Interaction Design textbook, Being-Human report, Sketching the User Experience textbook, and Thoughts on Interaction Design textbook. We will cover only a portion of the chapters from these books and jump around focusing on the excerpts that are the most important to the discussion at hand. A few of the chapters, I will summarize in lecture and are not added to the reading list. (So, class attendance is very important!)

Each of you will be required to write two blog entries about readings over the course of the semester. You will be notified one week in advance if you need to write a blog entry for the reading that week. Those writing a blog entry will need to write a concise one paragraph reaction to the readings. You must respond both to the reading as a whole as well as parts that stood out to you. The reaction can contain questions about the reading, comments about the reading, or how the reading relates to what we are talking about in class. You can, of course, go beyond these requirements if you wish to do so. You will be graded on a basis of a 0, ✓-, ✓, ✓+. If you are not writing a blog entry that week you will be required to comment on the blog posts from those who did. Responses will be due at 5 PM on the days listed at the end of the syllabus.

**VI. In-Class Design Work (10%)**

On the days marked on the calendar below, there will be design activities in class. These activities will involve group work where you will have some portion of the class to design within the specified constraints. You will be graded on your attendance to these events, your idea, and how well you explain your idea. Everyone in the group will receive the same grade.

**VII. Exam (midterm 20%)**

The exam will be comprehensive covering all material covered over the course of the semester. It will consist of a few short answer questions, short problems, and one design problem. More details will be available during the review before the exam.

**IV. Project (35%)**

The project will be a culmination of your work in the class. You will work in teams of three to five people. Each member of the group will share the same grade for the project. You will be expected to proceed through all the steps of the design process, create several alternative designs to choose from, create a simple low-fidelity prototype, and finally do some very simple user evaluations of the prototype. There will be a check-in on classes marked below to see how you are progressing. Your deliverables will be a small pamphlet documenting your design and a final presentation of your design to the class for public critique. More details are to follow.

**VIII. Extra Credit**

There will be one extra credit assignment announced after the midterm exam. The assignment will be an essay (3-5 pages) on a topic that interests you in HCI and is verified by the instructor. It will be worth 5% of the final course grade. The essay will be due on the Friday, June 19 at noon. There will also be a few events that you can participate in to get more extra credit.

**Important Dates:** (Dates are subject to change, if deemed necessary by me.)

Date	Sample Topics	Student Responsibilities
T May 12	Survey of Interests Syllabus Instructor Introduction Course Introduction and HCI/D overview <i>Brief Design Activity (Not graded)</i>	
W May 13	Why HCI? User-Centered Design Process	

		How to incorporate an HCI perspective	
<b>H</b>	May 14	What is Interaction Design? Introduction to Design Qualities of interactivity Usability versus User Experience <i>Design Activity (Not graded)</i>	Preece et al. (pp. 1-78 only) Chapter 1, 2 (5 PM)
<b>T</b>	May 19	Why do we prototype rather than implement Iterative Design Sketching Constructing a prototype Review	
<b>W</b>	May 20	Primer on Users and how we get to know them Tasks and Scenarios	
<b>H</b>	May 21	Cognitive aspects of users Social aspects of users Affect & Emotion <b>Design Activity</b>	Kolko Chapter 1 Buxton (pp. 46-61, 73-84, 276-307) (5 PM)
<b>T</b>	May 26	Design Process Roles & communication in a Design Team How are users involved?	<b>Design Project Groups Email</b>
<b>W</b>	May 27	How do we Design? Innovation Paradigms of interactivity in HCI	
<b>H</b>	May 28	Class Cancelled <i>Special Extra Credit Activity</i>	<b>Exam</b>
<b>N</b>	May 31		Preece et al. Chapter 3 Harper et al. (pp. 10-63 only) (5 PM)
<b>T</b>	June 2	Future HCI Future Interactivity Value-Centered Design <i>Discussion</i>	
<b>W</b>	June 3	Design & Prototyping Practice <b>Design Activity</b>	
<b>H</b>	June 4	Aesthetics Visual Design	Kolko Chapter 5, 6, Section 3 Essay
<b>T</b>	June 9	In-class final project work	
<b>W</b>	June 10	What is Evaluation & Why do it? Goals of Evaluation (Usability & User Experience) Laboratory & Field Studies How is an evaluation run?	<b>Design Project Check-In</b>
<b>H</b>	June 11	Evaluation Practice	Preece et al. Chapter 12

<b><i>Design Activity</i></b>		(pp. 584-595), Chapter 14 (5 PM)
<b>T</b>	June 16	Business of HCI Ethical Issues in HCI <i>Discussion</i>
<b>W</b>	June 17	Summary Review
<b>H</b>	June 18	In-class critique <b>Design Project Pamphlet</b> <b>Design Project Presentation</b>
<b>F</b>	June 19	<i>Optional Extra Credit Essay</i>