

Humans, Computers and Cognition
IDIA 640
Fall 2017

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Course description:

How can you as an interaction designer positively affect what a user thinks and does? This course will introduce you to a range of concepts, theories, and empirical methods from social psychology, linguistics, cognitive science, and neurobiology. These theoretical underpinnings will enable you to better predict under what conditions user confusion or miscommunication may occur and potential strategies for repair. They will also provide you foundational tools for creating more positive and persuasive interactions.

Overarching questions we will address together:

1. How can you use knowledge of how people process information to design more usable interfaces?
2. How can you use knowledge of how people communicate to design less confusing interactions?
3. How can you use knowledge of how people think to guide behavior?

Some beliefs we will examine closely include:

- We believe our senses (what we see, is what we believe)
- We believe we are rational beings
- We believe our thinking is largely conscious
- We believe what we say to be largely unambiguous
- We believe we make our own decisions

We will question these basic beliefs and show how they sometimes get us into trouble in communications design – and also how we can use them to advantage.

Course requirements:

Weekly reading and writing assignments: Each week will include one or more readings of a topical nature. Students are expected to compose a short, weekly journal entry on that topic. 45% (5 points each, 1 point deducted for each day late)

Critical Review: Each student will write a short, critical review of a scientific article. A list of articles to choose from will be provided. This same article and review are to be presented in class later in the semester. Guidelines and rubric will be provided. (10 points. 1 point deducted for each day late)

Presentation: During the course of the semester, each student will present her/his selected research paper to the class and lead a discussion. Class may be held in class or virtually. (5 points)

Participation: (10 points)

Project: Each student is required to complete a course project and present that project to peers at the end of course. The project will focus on persuasive design. (30 points)

Required Texts:

Johnson, J. (2014). *Designing with the Mind in Mind*. (2nd ed.). Morgan Kaufman. ISBN 978-0124079144

Kahnemann, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux.

Ware C. (2008). *Visual Thinking for Design*. Elsevier.

Topical Outline

Date	Topic	Readings (read before class)	Assignment Due Dates
August 28	Introduction, Getting started with GitHub		
September 5	HCI research methodologies: Controlled experimentation	Handout Choose article for critical review	Github practice, Design Problem
September 12	HCI research methodologies: Ethnographic, survey	Duranti, Glasow	Critical review
September 19	How do we know what we see? Sense & perception	Ware Ch. 1-5, (optional: Johnson 1-5)	Journal
September 26	How do we know about things?	Ware Ch. 6-7, Johnson 7-9,11	Journal
October 3	How we do think? (Attention and the divided brain)	Kahneman Ch. 1-9	Journal
October 10	How do feelings affect our beliefs? (Emotion, feeling, and neuroaesthetics)	Damasio, Nadal & Skov	Journal
October 17	How do we understand? (Communication as joint action)	Clark, Goffman (optional: Johnson 14)	Journal
October 24	How do people make decisions when they are uncertain? (Heuristics and biases)	Kahneman Ch. 10-14	Journal
November 31	Why is framing choice so important? (Rationality & decision-making)	Kahneman Ch. 25-34, Thaler & Sunstein	Journal
November 7	How are people influenced through persuasion?	Jucker, Cialdini & Fogg or Oinas-Kukkonen & Harjumaa	Journal
November 14	How does culture affect thinking?	Hall, Hofstede	Journal
November 21	Thanksgiving week – no class		
November 28	How do social networks affect behavior?	Christakis & Fowler, Hodas & Lerman	Journal
December 5	Student Presentations		Presentations