

# ISM 210: Introduction to Human Computer Interaction

(rev 1, March 31, 2019)

## Spring Session ONLINE 620

- Location & Meeting Time: Online Campus (new material posted on Tuesdays by 11:59 PM)
- Faculty: James Maciukenas
- Contact: [jmaciuke@depaul.edu](mailto:jmaciuke@depaul.edu)
- Office hours: Online office hours will be available via Phone, Skype, or D2L discussion. Office hours will be posted on Bluestar. Make an appointment and indicate how you would like to get in touch. I will update instructions here once office hours are finalized.

## Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed through announcements in D2L.

## Catalog Description

This course familiarizes students with the user interface development process, including user and task analysis, interaction design, prototyping and evaluation. Students study human perception, cognition and motor abilities as they relate to the design of interactive systems. In a series of projects, students design and revise prototypes as they apply a user-centered design process.

Emphasized topics include user profiles, information architecture and usability testing. Students provide written analysis of their research and process. Formerly IM 210. PREREQUISITE(S): None

## Learning Outcomes

- Students will be able to critique a software application or device using principles of interaction design.
- Students will be able to apply user-centered research methods for need finding, generating insights, and developing concepts for interactive systems.
- Students will be able to apply user research to design a digital application (website or mobile app) and create an interactive prototype.
- Students will be able to apply usability and evaluation methods to improve and refine a design.

## Course Structure

This course is reading-structured, meaning nearly everything in the course relates to the readings. *Lectures are supplements to the reading and will not cover everything you need to know. You must read all of the readings.*

## Project 1 & Related Workshops

- Students will learn to write interview questions for user research and will conduct field research via interviews. Project 1 is based on "Self-Tracking of Human Activity," or apps that allow people to track biological events (exercise, sleep, period, eating, etc).

## Project 2 & Related Workshops

- Students will learn to use an industry-standard, rough prototype application (Balsamiq), and learn to conduct user tests of prototypes. Students will conduct at least 6 user tests in a prototype/test/revise/test cycle.

## Quizzes and Exams

- Quizzes are focused on the reading assigned every week from Week 1-8. The Midterm Exam is based on Quizzes and Readings from Week 1-4, and potentially from video lectures.

## Reading & Participation

- The Readings are drawn from two industry-standard textbooks focused on design, as well as a few website articles. The quizzes and reading notes provide students with clues as to what

is important in the reading.

*Okay...but what are you going to actually LEARN?!*

## ISM 210 CORE MATERIAL

### Unofficial Course Description

In ISM 210: Introduction to Human Computer Interaction, we cover a lot of material. We go from basic interaction design principles to building and testing a prototype, over 10 weeks. While everything we cover is important (or it wouldn't be in the class), the material below is the most vital.

While the word **DESIGN** might be intimidating (or you might imagine it's just decorating the code that does the real work,) if you understand everything below, you'll understand that interaction design is learning about **PEOPLE**, how they act, what they want to do, and how they expect tools to behave. ISM 210 is a psychology class, as well as a design and computer science class.

#### 1. Seven Fundamental Design Principles

(Norman, pp 72-73, these are defined multiple times, and context is provided, across both textbooks.)

- Discoverability (also called Visibility)
- Feedback
- Conceptual Model
- Affordances
- Signifiers
- Mapping
- Constraints: cultural, physical, semantic, logical

#### *Notes on Seven Fundamental Design Principles:*

You cannot just memorize the definitions. As you encounter each term, you need to think about how this principle relates to interfaces you encounter every day. How is mapping related to the scrollbar on your browser? How has a designer failed to provide good feedback? You've always suspected that a lot of the interfaces you encounter are poorly designed (Campus Connect?) but now you will have specific concepts to cite when you complain...and then you'll start noticing how elevator buttons are grouped and labeled...and the doors, the "Norman doors" (Norman, CH 1).

#### 2. Design Research -> Prototyping -> Testing

(Saffer, Ch 4-8)

#### *Notes on Design Research, Prototyping, and Testing:*

You should read these chapters because there are quizzes, but also because you're going to do all three of these things, and if you don't read, you won't know what you're doing. If you find Saffer's explanation for any of the concepts in the book is not enough for you, feel free to ask more questions in the various D2L discussion sessions for readings. You can also search the web. Design researchers, and social science researchers, write about these things all the time.

#### 3. Jakob Nielsen's 10 Heuristics

<https://www.nngroup.com/articles/ten-usability-heuristics/>

#### *Notes on Jakob Nielsen's 10 Heuristics:*

If you are an ISM/UxD major, you need to internalize these concepts, combine them with the design principles above. Think in usability. Everyone else can work through the list, but everyone in class

should be able to understand these, they're simple suggestions for making better interfaces.

4. How to write a productive survey/interview, the difference between qualitative and quantitative (Saffer, pp 86-88)
  - 5 Common Survey Question Mistakes That'll Ruin Your Data see:  
<https://www.surveymonkey.com/mp/5-common-survey-mistakes-ruin-your-data>
  - How to balance qualitative and quantitative research see:  
[https://www.surveymonkey.com/mp/quantitative-vs-qualitative-research/?ut\\_source1=mp&ut\\_source2=survey\\_guidelines](https://www.surveymonkey.com/mp/quantitative-vs-qualitative-research/?ut_source1=mp&ut_source2=survey_guidelines)

*Notes on Survey/Interview Research:*

You'll be learning this via doing it. Do not write yes or no questions except for your screener. What's a screener? It's in the Week 3 reading.

5. How to sketch interaction with wireframes and storyboards.  
(Saffer, storyboards, pp 146-147 & wireframes: pp 151-154)

*Notes on Survey/Interview Research:*

You'll be learning this via doing it. Every student in the class should understand how to create and read a wireframe, you will see them in your work in design, CS, IT, IS, etc.

6. How to look at a site map.  
(Saffer, site map, pp 142-143)

*Notes on Survey/Interview Research:*

You'll need to be able to do this for weeks 6-10.

7. Building and testing a prototype.  
(Saffer, Ch 8)

*Notes on Survey/Interview Research:*

You'll need to be able to do this for weeks 7-10.

This class is NOT ONLINE LEARNING

Something to consider about online learning from Brown University

Learning online is different in many ways from learning in a physical classroom. In an online course, students must be more self-directed, manage their time efficiently, and assume greater responsibility for their own learning.

**If you are not sure you are ready for that, you should drop this class.** There are in-class sections of ISM 210 every quarter.

This online class is not, like many online CDM classes, attached to an in-person class. However, work in this class must be completed on a weekly basis. You may not fall behind. This class requires significant reading, thinking, analyzing, and significant experiential learning (you, doing things). You cannot pass this class by doing the assignments the hour before they are due. You cannot pass this

class by waiting until the end and turning everything in. You cannot pass this class without reading the required texts. **If you are not sure you are ready for that, you should drop this class.**

## REQUIRED MATERIAL

### **Required Textbooks**

**Designing for Interaction: Creating Innovative Applications and Devices** (2nd Edition), Saffer, Dan.

ISBN-10: 0321643399

**The Design of Everyday Things** (Revised Edition, 2013) - Norman, Donald. ISBN-10: 0465050654

It is suggested that you purchase both books. However, both books are available as e-books via DePaul Library (choose the correct version). You are required to do the reading every week from Week 1-8 (see schedule below) and lack of a textbook is no excuse for failing to complete quizzes.

*Additional readings will be posted to D2L*

Online Class Sites

**DePaul D2L:** Midterm Exam, Project 1 & 2, Quizzes, Workshops, Syllabus

### **D2L Discussions**

We will be using D2L Discussions as a collaboration tool where weekly Reading Notes will be posted, and where you can ask questions about the class, the assignments, the readings, or share something you found related to the class. Each week, be sure to actively participate in the discussions to get to the Reading Notes. Questions about the class that are not personal should be posted to the D2L Discussions, so that I can answer them there. This way, people who were also thinking of that question will see the answer.

### **D2L Discussions Guide**

You are only required to post in Weekly Participation discussion. There will be a prompt on D2L for the week. The other discussions are for you to ask questions and get feedback. NOTE: My email box gets full of all sorts of things from DePaul, a lot of it administrative work I'd rather avoid. I will answer questions on D2L Discussions BEFORE email questions about the class. If you have a personal issue, email me, if you have a question about a project, reading, assignment, etc., post it in the most appropriate D2L Discussion.

The following discussions will begin appearing in D2L during the first week or two of the spring quarter.

**Balsalmiq Discussion:** Discussion of technical issues related to Balsalmiq. We'll get into this later in the quarter.

**Project 1:** Discussion and questions about Project 1

**Project 2:** Discussion and questions about Project 2

**Reading Discussion:** Discussion regarding weekly readings assigned

**Student Discussion:** This is student-to-student discussion if you want to meet people or talk about things or post interesting articles related to the class

**Syllabus Discussion:** Questions related to the schedule, or anything not covered under another discussion topic

**Weekly Participation:** **REQUIRED** participation. **EVERY WEEK** there will be a participation prompt, for you to post something related to that week. As we move later into the quarter, these prompts will be to prepare you for what we are working on. **Workshop Discussion:** Discussion regarding weekly workshop assigned

## Software

In order to complete this class you will need consistent Internet access, as well as:

- Word processor that can export in PDF (no other document form will be accepted)
- Balsamiq desktop (license will be distributed later in the quarter)

Balsamiq is a mockup tool used for building prototypes. We will be using it to build rough prototypes. If you don't know what that means, you will by the end of this class. You will need to spend some time learning Balsamiq.

## Technical Knowledge

You are expected to know, or learn outside of class and how to communicate via D2L. You must be sure you know how to submit documents on D2L, as well as complete and submit D2L quizzes. Not understanding how to properly use D2L is not an excuse for late or absent work. During the first week, you may need to ask for help or check for tutorials online. You are expected to learn Balsamiq, and you may need to do some tutorials to understand it.

# YOUR COMMITMENTS

## Time Commitment

I assume that you intend to spend 3 hours per week on material that would normally be covered in class (lecture, notes, participation, workshops, quizzes, midterms) and 3 hours per week on work that would normally be done outside of class (reading, reading notes, projects 1 & 2). This adds up to an average of 6 hours a week, every week. **If you are not sure you are ready for that, you should drop this class.** That said, this class has fewer assignments and less writing than the in-class sections of ISM 210, and you should have no trouble completing the material by spending the proper amount of time each week.

## Time, Scheduling, and Accommodation

Extra time has been given to ALL online students in this class, over and above the time allowed for in-class sections of ISM 210. Participation and Workshops are based on the in-class section of ISM 210, and should take no longer than 1-2 hours to complete. Each student, regardless of accommodation, has an entire week to complete the work. This means that the course was already designed with accommodations in mind, in the way the class is scheduled.

Any student seeking additional time beyond this will need to inform the instructor within the FIRST WEEK OF CLASS, with an accommodation letter, an explanation of the specific assignments that the student needs more time on, and the reason you expect the assignment to take longer. Accommodations will *only* be made on a case-by-case basis for specific assignments.

## Quizzes and Exams: open book and due on time

Students are free to use the books and course material to complete quizzes and exam.

Students are, in fact, *encouraged* to use the books and any other resource to complete the quizzes and exam.

Quizzes are not timed, and they are taken online where ever you choose. Each student in the class has 1 week to complete the quiz. However, you may not revise your quiz once it is submitted. Quizzes that are filled out and not submitted will receive zero credit.

Quiz questions will be posted separately from the quiz, as well as in the quiz. Students can answer the questions in their own time in another document, then answers the questions in the quiz on D2L before

submitting it.

Quiz questions are intended to point you to parts of the reading that will be covered on the Midterm Exam and material you will need for Project 1 & 2. A quiz will cover the current week's reading, but may also include questions from any previous reading. Some quizzes will repeat important material from previous weeks.

The Midterm Exam is not timed, and each student in the class has 1 week to complete the exam. Exam questions will be posted separately from the exam, as well as in the exam. Students can answer the questions in a text document on their own time, then

complete the exam on D2L. Students who do not keep up on the reading and quizzes may have a very difficult time completing the Exam, as well as difficulty with Project 1 & 2, and their overall grade.

### **Projects**

Projects 1 & 2 will be announced at the beginning of the semester, and students are expected to work on them from the official announcement date until the due date. Workshop assignments will help students prepare for the projects. Projects are a SIGNIFICANT undertaking, and students who do not complete the Exercises, Workshops, and/or who cheat on the quizzes and exams will be at a serious disadvantage when attempting to complete Project 1 & 2.

### **Late Work**

You cannot pass this class by waiting until the midterm and letting me know you will "make up" the work.

Exceptions will only be considered when students apply for and receive an Absence

Notification for serious life issues:

<https://offices.depaul.edu/student-affairs/support-services/academic/Pages/absence-notification.aspx>

CDM Absence Notification note: *"Absences cannot exceed five days per incident, and documentation must be submitted within two weeks of the absence."*

The ability to turn in Exercises, Workshops, Quizzes, Exams, and Projects will go OFFLINE (no late work) at the times specified below. You may not turn in any work past these times. In order to make this class successful, strict deadlines will be kept. The deadlines are all listed below.

If you are not sure whether you will be able to meet the deadlines, you should drop the class. Academic & Professional Standards

This class will use academic and professional standards, and I expect students to follow the following, simple format standards.

### **Professional image capture** (if the work is written or drawn on paper)

Points will be taken off for poor quality images, including: shadows of your phone/arms/lamp in the picture, sloppy images with paper skewed to one side, dark or overly bright images, wrong aspect ratio. Points will be taken off for illegible handwriting.

### **Professional screen capture**

Points will be taken off for the following: capturing the entire screen or window when only a small element is being discussed, wrong aspect ratio, low resolution.

### **Exercises and Workshops**

Submit text in the D2L interface, embed any images in the post, do not attach them as files. I will not

click on an image in order to see it.

Do not attach Word, PDF, or any other document. Any text not in the D2L forum interface will be treated as if it does not exist.

**Project 1 & 2:** Must be well-formatted PDF documents. No other document will be accepted, and I will **not** notify you if you upload the wrong document format (.doc, .rw, etc.). You will not receive credit.

### **Blank posts, empty documents, and other “errors”**

Some students claim the work has been turned in by uploading a blank document, or a document with errors, as if something went wrong on the upload. Blank documents and documents that cannot display will not receive credit and cannot be turned in late.

You can see your own post to D2L, check them after submitting. You can download your document after you submit it, and then check it. You should always do this: Upload, Download, Check, or Post, Check. This is standard in academic and professional practice.

These standards may seem unfair because *mistakes happen!*

In both academic research and professional contexts, you must constantly guard against carelessness. As an academic researcher, if I submit a 2,500 word document when the conference requested 2,000 words, my submission will be deleted. Some instructions for submissions say this specifically. When I was working as an Information Architect, my reports documenting the traffic to the web site I was hired to work on were always well-formatted and carefully constructed because I wanted people to take my work seriously.

Sloppy work and poor formatting cause people to doubt the information you are trying to convey. When in doubt, make things simpler.

People in professional and academic worlds will forgive a few typos, and so will I. They will seriously doubt you (or even cease working with you) if your work is a mess or if you ignored basic standards they request for deliverables (work you turn over to a client). I will take points off for the former, and put down zero points for the later.

## **Grading**

<i>Item</i>	<i>Points</i>	<i>Percentage</i>
Total	1000	100%
Class Participation	340	34%
Quizzes	160	16%
Project 1	200	20%
Project 2	200	20%
Midterm Exam	100	10%

### **Grading Details**

CLASS PARTICIPATION: 340 points

- Overall participation (Participation in assignments, asking/answering questions regarding the reading, participating in discussions): 40 pt
- Workshops (10): 30 pt each

QUIZZES: 160 points (1 per week, weeks 1-8)

- 7 quizzes, 1 survey: 20 pt each

Project 1: 200 pt

- Script: 100 pt (well-written questions that result in good data)
- 10 points per interview: 50 pt
- Analysis: 50 pt

Project 2: 200 pt

- Prototype: 50 pt (must show improvement between revisions 1 & 2)
- Test script: 50 pt
- Test results: 100 pt

Midterm Exam: 100 pt

## Schedule

### DePaul University Schedule

<https://www.depaul.edu/university-catalog/academic-handbooks/graduate/university-information/pages/academic-calendar.aspx>

April 1	Classes Begin
April 12	Last Day to Drop
May 17	Last Day to Withdraw
June 7	End Classes
June 8-14	Final Exam Week
June 14	End Spring Quarter

### Weekly Order of Operations

Each week, you should do the following:

- Read the D2L notes for the week, under Content > Week #
- Read the Reading Notes for the week: these are hints about what to pay attention to in the reading, but read everything. You need context to understand the important part.
- Read the assigned reading (all of it, Week 1-8)
- Complete the quiz and turn it in (Week 1-8)
- Watch the lecture video (if applicable)
- Complete the lecture-related participation, turn it in on Slack
- Complete the Workshop for that week (Week 1-10)
- Check dates for Project 1 & 2, & Midterm

### Workshops, Exercises, & Quizzes

Workshops and Exercises are due on Mondays at 11:59 PM, the week following their assignment. Quizzes are due on Mondays at 11:59 PM, the week following their assignment.

### Project 1 & 2



Project 1 due: May 12 @ 11:59 PM Project 2 due: TBA @ 11:59 PM

### Midterm Exam

Midterm exam Due: April 28 @ 11:59 PM

## Detailed Schedule

Class Begins: April 1 and Class Ends the week of June 8-14.

Date Reading	Topic / Note Quiz?	Workshop	Assignment		
4/1-4/5: Week 1	Introducing ISM 210 & HCI, UXD, IxD	W1: Quick Design Cycle		Norman Ch 1 & 6, Saffer Ch 1	Quiz 1
4/8-4/12: Week 2	IxD Principles	W2: Applied Design Principles		Norman Ch 2 & 3, Saffer Ch 3	Quiz 2
4/15-1/19: Week 3	Applied IxD Principles	W3: Working with Balsamiq		Norman Ch 3, 4, Saffer Ch 4	Quiz 3
4/22-4/26: Week 4	Design Research & Questions Midterm Review	W4: Time Travel	MIDTERM AVAILABLE	Saffer Epilogue (last chapter in book)	Survey 4
<b>April 28 @ 11:59 PM</b>	<b>MIDTERM DUE</b>				
4/29-5/3: Week 5	Design Research & Drafting an Interview	W5: Interview Preparation	Project 1 Assigned	Saffer Ch 5	Quiz 5
5/6-5/10: Week 6	Ideation & Prototyping	W6: Interaction Sketching	Project 2 Assigned	Saffer, storyboards, pp 146-147 & wireframes: pp 151-154 2 heuristics @ D2L	Quiz 6
<b>May 12 @ 11:59 PM</b>	<b>PROJECT 1 DUE</b>				
5/13-5/17: Week 7	Visual and Gestalt Design Principles	W7: Prototype of Existing Interface		Saffer Ch 7	Quiz 7

5/20-5/24: Week 8	Prototyping User Testing: Planning	W8: User Test of Existing Prototype		Saffer Ch 8 2 usability articles D2L	Quiz 8
5/27-5/31: Week 9	Prototyping User Testing	W9: Revised Prototype			
6/3-6/7: Week 10	Project 2 Review	W10: User Test of Final Prototype			
<b>TBA @ 11:59 PM</b>	<b>PROJECT 2 DUE, Workshop 10 Due</b>				

## OFFICIAL DEPAUL NOTIFICATIONS

### Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks.

Students do not receive reminders once they complete the evaluation.

Please see <https://resources.depaul.edu/teaching-commons/teaching/Pages/online-teaching-evaluations.aspx> for additional information.

### Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <https://offices.depaul.edu/oaa/faculty-resources/teaching/academic-integrity/Pages/default.aspx>

### Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at: <http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>

### Incomplete Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at <http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>

### Students with Disabilities

DePaul University is committed to ensuring equal access to its educational and extracurricular opportunities for students with disabilities. The Center for Students with Disabilities (CSD) offers

reasonable academic accommodations and services to support our students. We also serve as a resource to the many university departments that have a responsibility to accommodate students. Please see <https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx>

**Civil Discourse**

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.