Course Info: 3 Credit Hours | Room: IT###, Tues 6:00 – 8:40PM | Section: 

Instructor Info: Stuart Ough, Adjunct Faculty, HCI Graduate Program  
Email: hcistu@gmail.com (primary) or sough@iupui.edu  
Chat: GTalk id hcistu@gmail.com  
Phone: (O) 317-428-3202 | (C) 317-490-7306  
Office Hours: By appt., before/after class, phone or IM/chat

[Online Instructor] TBD, Adjunct Faculty  
Email:  
Chat: *optional*  
Phone: *optional*  
Office Hours: By appt. or email communcation

Contact Policy for Stuart O.: Available by phone between 8am-9pm any day of the week. Leave a voicemail if I don’t answer and I will return the call when possible. Ping me via GTalk at any hour. Again, I will respond if available. You may also email anytime.

Contact Policy for online instructor: TBD

Prerequisites: None (Not an extension of any undergraduate course.)

SUMMARY COURSE DESCRIPTION
The course covers methodologies for designing and prototyping graphic user interfaces, including rapid (paper) and dynamic (interactive) prototypes. Principles of design research and visual communication are discussed in the context of interaction design, cognition and user behavior, as well as usability testing techniques for concept validation.

REQUIRED COURSE TEXT

Title: Paper Prototyping  
Author: Carolyn Snyder  
Copyright: 2003  
Publisher: Morgan Kaufmann Publishers  
Web site: http://www.paperprototyping.com/

OPTIONAL / SUGGESTED INDUSTRY BOOKS

Title: Sketching User Experiences  
Author: Bill Buxton  
Copyright: 2007  
ISBN: 978-0-12-374037-3  
Publisher: Focal Press / Morgan Kaufmann
Articles and Papers Available on OnCourse:
Please note, this list may change as new articles are found. Changes will be noted in OnCourse and through syllabus amendments as needed.

1. Intro and Part 1 from Dynamic Prototyping
2. Prototyping is the Shorthand of Design (Kelley)
3. Simplicity is Overrated (Norma) http://www.jnd.org/dn.mss/simplicity_is_highly.html
4. How to Prototype and Influence People (Raskin) both slides and video available-- http://uxmag.com/design/how-to-prototype-and-influence-people?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed:+UXM+(UX+Magazine)&utm_content=Twitter
5. Interaction design prototyping of comm. Devices (Pering)
6. Design the PDA of the future (Marcus)
7. Low vs. high fidelity prototyping (Rudd)

EXPANDED COURSE DESCRIPTION
Overview: This course is about the application of prototyping in the context of user-centered design (UCD). Emphasis will be placed on the prototyping process, which includes: applying good design, product conceptualization, user modeling and product validation through product testing. Interaction design will be a key factor for creating successful prototypes, i.e., about the modeling of the user’s experience and creating the most effective, efficient and comfortable experience for the user.

Theory and Practice: There will be considerable reading and practice every week. Theory plays an important part to establish an understanding of knowledge of the interrelated aspects of process and product development. The reading schedule will continue up until the last four weeks of classes; at which point students will be given full time to finishing their final project. Practice will include weekly assignments and in-class exercises used broaden the understanding from the reading.

Design: Prototyping is about the visual representations of complex systems and interaction models that meet high levels of design and usability. Drawing is important to do this successfully. Prototyping is not about perfecting one’s drawing skills per se, but the intellectual and physical freedom to express ideas on paper instantly, easily, and spontaneously. Regarding generating visualizations of ideas, computer graphic software is still rather primitive compared to the directness of pen and paper. Hence to better express visual concepts through images, it is recommended that students use any extra time available to study books, magazines, and web sites on design. This helps to continually provide a visual vocabulary of good design. Also, if time allows, students should try to keep a daily drawing dairy or notebook. They may want to draw both
objects and figures. The key is to become comfortable with the drawing process in which mental images and concepts are translated into visual form.

Prototyping Tools: Beside the theoretical background of this course, we will cover a range of tools for making static and dynamic prototypes. The various pros and cons of available software will be discussed, but class time will not be spent learning new computer-aided tools.

Prototyping Terminology: It should be noted that the range of literature that discuss the prototyping, in some cases use different terms to describe the various aspects of the process. There is a general agreement and use of most of the terms, but in some cases professionals are rather relaxed about the exact usage of terms. For example, all practitioners will agree on the general meaning of a dynamic prototype as a working model. However, whether it would be considered as the core product for the finished product is another matter. Some firms only use Flash or Director to make their dynamic prototypes that would eventually be programmed in C++ or Java. So, company policy, budget, and skill-set of the designer have much to do with the final output.

Not Software Centered: Because this course is NOT software-centered, all students should attempt to learn the mechanics of the dynamic prototyping tools. Software demos will be provided if needed. Those who already know how to use these tools have an advantage. It is, however, recommended that students attempt to broaden their skill-set by learning these digital prototyping tools on their own. Common software used as prototyping tools include: Flash, DreamWeaver (HTML), Visio, Visual Basic, Photoshop, Fireworks, and even PowerPoint. Examples of prototyping specific software include: Axure, Balsamiq, Omnigraffle, and GoMockingbird.

COURSE OBJECTIVES / OUTCOMES

The learning outcomes of this course will include that each student acquiring the ability to explain terms and apply concepts related to the following range of prototyping topics:

1. Prototyping basic terms
2. Prototyping paper and dynamic techniques
3. A user-centered approach as applied to prototyping
4. User needs / requirements and product assessments
5. Design research processes and the life-cycle of interaction design
6. Various design research theories and methods
7. Interface design concepts and techniques
8. Product design evaluation and usability testing methods

Students will be able explain, recognize, and apply with considerable depth:

1. Knowledge about prototyping related to:
   • Prototyping terms and principles
   • A user-centered approach to prototyping and interaction design
   • Interface design principles and processes
   • Design theory and methods
   • A user-centered approach to interaction design that will include:
     o Analyzing user needs and requirements
     o Creating interface designs and related prototypes
     o Adapting specific product evaluation/testing methods
2. Methods of product design and development related to:
   • Producing prototypes based on user assessments
• Applying prototype principles and a user-centered approach to interaction design
• Apply evaluation and usability testing methods to prototypes to validate design decisions

COURSE TEXT, READING, and CLASS DISCUSSIONS

Assessing Your Competence of the Reading Material:
We will cover one chapter per week from the course text, in addition to supplemental readings in human computer interaction. Each student should not only read but arrive at a competent understanding of the materials. Multiple measures will be used to assess learning competency from the weekly readings:
1. Weekly discussions, directed by specific questions, will be given in an open class discussion format, either in class or in an online chat forum. During this time the instructor will challenge student comprehension, while adding practical applications to the theoretical content.
2. In-class projects will be used to challenge student comprehension, while adding practical applications of the techniques discussed.
3. Quizzes may be given to assess learning and comprehension, as well as to determine if students are doing the reading.
4. A final paper or project report will be assigned in which students will summarize and integrate theories and project assignments from the semester-long reading assignments.

Class Lectures and Discussion:
The purpose of class lectures/discussions is to provide an overview of the chapter and to help provide insight into the course theory. Questions generated by the students during the class discussion are necessary to provide more depth in some of the more problematic areas of theory and application. Each week, students must:
1. Come prepared to discuss the reading assignment.
2. Provide questions that can help the class into the content of the chapter, e.g., questions that are derived from a students’ perplexity, confusion, or lack of clarity regarding some theory or practice. They may also challenge the class with a problem derived from the theory. The student should direct the class to that point in the text that addresses the issue at hand.
### COURSE GRADE BREAKDOWN

<table>
<thead>
<tr>
<th>Grading Item</th>
<th>Grade Percent</th>
<th>Weeks to Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment #1</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Assignment #2</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Midterm Project</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Final Project</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>Class Participation*</td>
<td>10</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

*Participation and engagement observed during class time:
  - In-class (or online) prototyping exercises as assigned
  - Responsiveness and knowledge of reading materials during open discussions
  - Evidence of active preparation in team and/or class or online discussions.
  - Evidence of active preparation in team projects and report development.
  - Class attendance and promptness to class time (on campus section).
  - Attitude and investment in the course as a whole.
  - Responsiveness to forums (online and on campus)

### GRADE SCALE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97-100</td>
</tr>
<tr>
<td>A</td>
<td>93-96.99</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.99</td>
</tr>
<tr>
<td>B+</td>
<td>87-89.99</td>
</tr>
<tr>
<td>B</td>
<td>83-86.99</td>
</tr>
<tr>
<td>B-</td>
<td>80-82.99</td>
</tr>
<tr>
<td>C+</td>
<td>77-79.99</td>
</tr>
<tr>
<td>C</td>
<td>73-76.99</td>
</tr>
</tbody>
</table>

### GRADING PRINCIPLES & POLICIES

**Evaluation Forms:** Students should review all grading forms that will be used by the instructor to grade projects, presentations, papers, and other assignments. Please see the course website under the section called “Evaluation Forms.” These documents will show you the checklist and criteria by which each class assignment will be evaluated.

**Grade Review at the Midterm:** Students will be shown their midterm grades after the midterm project has been evaluated. If students want to see their grades at any other time during the semester, they should contact the Instructor by email and the Instructor will send them the grades by email.

### POINTS TO NOTE for SUCCESS

1. **Rigor:** This course will move along at a quick pace, being organized around a collection of weekly chapter readings and design exercises related to HCI theory and application. Though this course is an introduction to the HCI for graduates, it attempts to become as specific as possible about the major models and concepts of interaction design.
2. **Accountability:** Assignments and projects are not merely for learning but also a test of your character whereby diligence and accountability are required.
3. **Cooperation and Communication:** Cooperation with the instructor is vital for maintaining a high degree of productivity and harmony in weekly assignments and during class time. Oral and written communication is an important part of this course. We will have weekly open discussion sessions and project reports provide a way to explain in detail the theoretical and practical aspects of the project.
4. **Creativity:** This course demands not only a weekly response to assignments, but also some degree of creativity in product design and concept development. This is actually one of the more exciting and dynamic aspects of the course, where students have a chance to develop products where they can apply much of the theory gained during the weekly assignments.

**POLICIES for ATTENDANCE & ASSIGNMENT/PROJECT DEADLINES**

1. **Missing required class/course chat times or forums interactions WILL affect your grade.** Online has been designed to allow maximum flexibility to the student through asynchronous learning. Communications will rely not on live, face-to-face, but rather online chats, forums, emails, and other documents and media sharing.

   a. Online class chats using the OnCourse chatroom will be schedule as needed during the semester. While not required, they will be recommended and a great way to interact with the instructor or fellow classmates.

   b. Forums will replace in-class discourse. Not all threads will be required, and those that are will be clearly labeled and communicated to the students.

2. **Responsible for due dates and related materials:** All weekly due assignments are the students’ responsibility. If class is missed, the student is still responsible for the assignment, as well as to find out what was covered in class, e.g., any new assignments or variations to an existing assignment. ALL assignment deadlines are outlined in the syllabus or syllabus supplemental documents provided on OnCourse. The instructor will only give one reminder of these dates. In the end, each student is responsible for the deadline. Also, weekly assignment deadlines should be adhered to, to insure fairness to all students. For the purpose of maintaining an equal and fair evaluation of each student’s work, no student will receive special treatment. As a result, the following rules will apply to this course:

   a. **All assignments must be ready to hand in or email at the designated time and place as stated on the assignment sheet, as communicated via email, or on the syllabus.**

   b. All assignments handed in late will be reduced 10 points for every day late (24 hrs. from the due date and time). For example, if the assignment is due at 6PM on the due date and it is post-marked 6:01PM, it will be reduced automatically by 10 points. If the class meets in the class room, students must be ready to hand the assignment in at the start of class time.

   c. **Incomplete** will NOT be issued except under very extreme personal conditions that have been reviewed by the instructor and in some cases in consultation with the Dean’s Office.

3. **NOTE:** Due dates for the online section will be a few days behind the in-class syllabus. This is to account for the time delay in upload presentations and online students having a few days to listen. Due dates will be shifted to the weekend AFTER that of the on-campus section. See the table at the end of this document for exact timing.

**UNIVERSITY POLICIES**

1. **University Attendance Policy:** Attendance is required. The University regulations state: “Students are expected to be present for every meeting of the classes in which they are enrolled.” IUPUI faculty are required to submit to the office of the Register a record of student attendance through the semester, on which they will take action if the record conveys a trend of absenteeism. As a result, ATTENDANCE WILL BE TAKEN IN ALL CLASSES. An Attendance sheet will be passed out in class for each student to sign their name. If you do not sign your name while in class you will be marked absent. The instructor is not expected to remember who attended when, so signing the sheet while in class is important. Signing the attendance sheet for another student is absolutely prohibited. Any student found doing so will be in violation of university policies on ethics and/or conduct.

2. **Bring your children to class:** University Policy states that: “Children are not permitted to attend class with parents, guardians, or childcare providers. This conduct has the effect of unreasonably interfering with an individual’s work or academic performance creating an offensive learning environment.” “A student must not violate course rules as contained in a course syllabus, which are rationally related to the content of the course or to the enhancement of the learning process in the course.” [Code of Student Rights, Responsibilities, and Conduct, page 29]

3. **Academic Dishonesty / Integrity / Plagiarism:** Using another student’s work on a project or
assignment, cheating on a test, or any other form of dishonesty or plagiarism will result in a grade of zero on that assignment and possibly an "F" in the course, and will be referred to the Dean of Students. All students should aspire to high standards of academic honesty. This class encourages cooperation and the exchange of ideas. For further reference, students may see:

a. [http://www.iupui.edu/~resgrad/grad/academic_misconduct_curriculum_subcommittee.rtf](http://www.iupui.edu/~resgrad/grad/academic_misconduct_curriculum_subcommittee.rtf)

4. Values and ethics: Profanity or derogatory comments about or towards the instructor or any member of the class will NOT be tolerated. Violating this rule will result in a warning and if the offense continues, administrative action will be taken.

5. Code of Student Rights, Responsibilities and Conduct: All students are responsible for reading, understanding, and applying the Code of Student Rights, Responsibilities and Conduct of IUPUI. (students can access [www.iupui.edu/code](http://www.iupui.edu/code) for further information regarding the above points)

6. Disabilities Policy: In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to "reasonable accommodations." Please notify the instructor during the first week of class of any accommodations needed for the course. Students with learning disabilities must provide written verification for this policy to be recognized.

BIBLIOGRAPHY

The following is a representative sample of the selected readings in addition to the course text.


<table>
<thead>
<tr>
<th>DATE</th>
<th>READING ASSIGNMENT</th>
<th>CLASS TIME</th>
<th>PROJECT WORK</th>
</tr>
</thead>
</table>
| Week 1    | No reading         | • Cover Syllabus and expectations  
• Presentation 1: What is prototyping  
• In-class prototype exercise  
• **ASSIGNMENT 1 ASSIGNED**  
• Review Assignment #1 details |
| Wk 2      | Snyder: Chapters 1 & 3 | • Class discussion  
• Review assignment 1 progress  
• In-class prototype exercise  
• **ASSIGNMENT 1 ASSIGNED**  
• Assignment #1, part 1 due  
• Review work-in-progress |
| Wk 3      | Snyder: Chapters 4 | • Class Discussion  
• **ASSIGNMENT 1 DUE**  
• Class Critique Assignment #1  
• In-class prototype exercise  
• **ASSIGNMENT 2 ASSIGNED**  
• Assignment #1 – Final DUE  
• Review Assignment #2 details |
| Wk 4      | Snyder: Chapters 5 & 6 | • Class Discussion  
• In-class prototype exercise  
• Assignment #2 – 1st prototype draft (work-in-progress) |
| Wk 5      | Snyder: Chapter 7 | • Class Discussion  
• In-class prototype exercise  
• Assignment #2 – 2nd prototype draft (work-in-progress) |
| Wk 6      | Snyder: Chapter 8 & 9 | • Class Discussion  
• **ASSIGNMENT 2 DUE**  
• In-class prototype exercise  
• **MIDTERM PROJECT ASSIGNED**  
• “Sifteo Cube Application”  
• Assignment #2 – Final DUE  
Midterm Project:  
• Form Teams  
• Introduce Project |
| Wk 7      | Snyder: Chapter 10 & 11 | • Class Discussion  
• In-class prototype exercise  
Midterm Project:  
• Ideation and early paper prototypes  
• cog-walkthroughs completed |
| Wk 8      | Snyder: Chapter 12 & 13 | • Class Discussion  
• In-class prototype exercise  
Midterm Project:  
• Revised paper or early digital prototypes |
| Wk 9      | Snyder: Chapter 14, 15 & 16 | • Class Discussion  
• **MIDTERM PROJECT DUE**  
Midterm Project:  
• Paper or digital prototypes completed  
• In class presentation of projects  
• Submit written summary |
| Wk 10     | -- SPRING BREAK – 3/11-15 | • SPRING BREAK  
--- Enjoy --- |
| Wk 11     | Articles  
1. A List Apart: Sketching  
2. Affective Prototyping | • Class Discussion  
• In-class prototype exercise  
• **FINAL PROJECT ASSIGNED**  
Final Project:  
• New team assignments  
• Introduce Project |
| Wk 12     | Articles  
1. Good Design Faster  
2. Pinterest’s Founding Designer Shares His Dead-Simple Design Philosophy | • Class Discussion  
• In-class prototype exercise  
Final Project:  
• Concept ideation sketches due  
• Select concept |
| Wk 13     | Articles  
1. 7 Best Practices for Improving Website Usability  
2. Redefining Hick’s Law | • Class Discussion  
• In-class prototype exercise  
Final Project:  
• 1st iteration paper prototypes due  
• Conduct informal user testing |
| Wk 14     | Articles  
1. Ten Laws to Design By  
2. Transitions | • Class Discussion  
• In-class prototype exercise  
Final Project:  
• 2nd iteration prototype due  
• Conduct informal user testing |
| Wk 15     | Articles  
1. Touch Target Sizes  
2. The measurability and predictability of user | • Class Discussion  
• Work on Final Project  
Final Project:  
• Initial digital prototype due |
<table>
<thead>
<tr>
<th>Wk 16</th>
<th>Articles</th>
<th>Class Discussion</th>
<th>Final Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Recommendations On Recommendations</td>
<td>•</td>
<td>• Dynamic prototype due</td>
</tr>
<tr>
<td></td>
<td>2. The Brainstorming Process Is B.S. But Can We Rework It?</td>
<td>• Work on Final Project</td>
<td>• Test and update dynamic prototype</td>
</tr>
<tr>
<td>Wk 17</td>
<td>NO READING</td>
<td>• Class Discussion</td>
<td>• Final prototype, presentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• FINAL PRESENTATIONS</td>
<td>recordings, and report due</td>
</tr>
</tbody>
</table>