I543
Usability and Evaluative Methods
[also listed as: I543 Interaction Design Methods]

Indiana University School of Informatics IUPUI

Fall XXXX
Version 3.8

Course Info:  OnCourse URL and section info here

Instructor:  Instructor's info here

Prerequisites:  None (it is recommended to take I541 before or in parallel to this class)

COURSE DESCRIPTION
The course will cover the principles and methodological foundations of usability evaluation, highlighting the implications of usability for the requirements and design activity of HCI applications. Topical focus will be on understanding usability fundamentals for the web, interactive software, mobile applications, as well as emerging devices and technologies, in the context of information-intensive domains. The most important families of usability evaluation methods will be addressed, including analytical evaluation (inspection methods) and usability testing, with an emphasis on the conceptual tools for evaluation, the evaluation process, problem modeling and analysis, qualitative and quantitative usability analysis, feedback elaboration for design or re-design, as well as the documentation and communication of the findings. Students will apply the evaluation methods on real, non-trivial interactive systems, and will learn how to gain usability insights, inform redesign and communicate the findings to the relevant stakeholders. Weekly readings on the text book will be integrated with academic and professional articles and reports.

REQUIRED COURSE TEXT
Title:  User Interface Design and Evaluation
Author:  Stone, Jarrett, Woodroffe, and Minocha
Copyright:  2005
Publisher:  Morgan Kaufmann
Available on Amazon:  direct link
Each student must own a copy of this book by the first day of class.

Title:  Usability Inspection Methods
Author:  Jakob Nielsen and Robert L. Mack (Eds.)
Copyright:  1994
Publisher:  John Wiley & Sons

⇒ reading assignments from this book, currently out of print, are made available on OnCourse.

Title:  Measuring the User Experience
Author:  Tullis and Albert
Copyright:  2008
Publisher:  Morgan Kauffmann

⇒ selected parts of this book are made available on OnCourse as PDFs.
COURSE OBJECTIVES AND LEARNING OUTCOMES
Each student will acquire knowledge and the ability to explain terms and concepts related to the following range of usability topics:

- usability theory, concepts and terminology
- applied techniques and best practices of usability evaluation
- recall of design guidelines and principles
- concepts, process and techniques for analytical (inspection) methods
- traditional usability testing methods, process and technical equipment
- analyzing usability data (qualitative and quantitative)
- reporting and communicating usability findings
- using usability results to inform redesign

At the end of the class, students will be able to plan and perform a systematic, comprehensive and accurate usability evaluation of a complex interactive application (desktop, web, or mobile) and deliver a professional usability evaluation report.
GRADING (see below for detailed description of grade components)

1. Class Participation (individual) 10%
2. Weekly contribution to group project (individual) 10%
3. Midterm Team Presentation 15%
   Midterm Project Presentation (individual contribution) 10%
   Midterm Project Presentation (group) 5%
4. Final Team Presentation 15%
   Final Project Presentation (individual contribution) 10%
   Final Project Presentation (group) 5%
5. Team Midterm Project Report 25%
6. Team Final Project Report 25%

Final class grade (individual) 100%

GRADE SCALE

A+   97 - 100      [outstanding achievement]
A    93 - 96.99   [excellent achievement]
A-   90 - 92.99   [very good work]
B+   87 - 89.99   [good work]
B    83 - 86.99   [marginal work]
B-   80 - 82.99   [very marginal work]
C+   77 - 79.99   [unsatisfactory work]
C    73 - 76.99   [unacceptable work]

DETAILED DESCRIPTION OF GRADE COMPONENTS AND EXPECTATIONS

1. Class Participation (individual). The participation grade is based on the evaluation of the performance of the following activities:

   (a) completeness and punctuality of weekly written discussion points. Each week, each student needs to study the reading assignments and post on OnCourse 1 interesting discussion point (one or two paragraphs) for each weekly reading assigned (either a book chapter, paper or report). The discussion points should demonstrate original, intellectual elaboration on the subject. It must also demonstrated that you have studied the entire content of the reading and can pertain: a relevant example of a practical application, a
connection with an HCI topic or event of particular relevance, a reference (with explanation) to a related resource found, a supportive argument or a counter-argument to the topics discussed in the readings.

→ Discussion points must be posted on OnCourse/Messages by 12 noon of class day. Subject of each posted message: Smith_WK3_Paper-Title

Weekly readings (book chapters, papers, reports, online resources) are indicated in the weekly schedule (last section) of this syllabus and are made available either as web links from the Weekly Schedule or as resources in OnCourse/Resources.

(b) Each week, each in class student is expected to come prepared in class in relation with the entire reading assignments, to support the discussion points raised and to engage in purposeful discussion.

(c) Demonstrated weekly reading preparation, proactive participation in class discussion, quality of questions posed during project presentations.

2. Weekly contribution to group project (individual). This grade is based on the evaluation of the following tasks:
(a) Each week, each student is expected to explain and show to the instructor the weekly, individual contribution to the team project during the project meetings. Lack of evidence of substantial, individual contribution to the weekly team work will result in a lower grade.

(b) Ways to show and demonstrate individual contribution are the following:
   • Each week, students take turns in leading the discussion with the instructor to showcase the evidence of the weekly progress (documents produced, data collected etc.)
   • Each student does contribute to the demonstration of evidence of weekly contribution.

(c) Individual contribution must fit well in a coordinated effort among team members to weekly share responsibility for the project task assigned.

3. Midterm Team Presentation. This grade is based on the evaluation of the performance of the following activity:
(a) Individual contribution and participation to the team presentation of the midterm project. Evaluation criteria: organization/structure of the presentation, timing, richness/saliency, clarity, cohesiveness, delivery.

(b) Quality of the team presentation as a whole. Evaluation criteria: organization/structure of the presentation, timing, richness/saliency, clarity, cohesiveness, delivery.

4. Final Team Presentation. This grade is based on the evaluation of the performance of the following activity:
(c) Individual contribution and participation to the team presentation of the final
project. Evaluation criteria: organization/structure of the presentation, timing, richness/saliency, clarity, cohesiveness, delivery.

(d) Quality of the team presentation as a whole. Evaluation criteria: organization/structure of the presentation, timing, richness/saliency, clarity, cohesiveness, delivery.

5. **Midterm Project Report.** See *Project Description Document* for details on project tasks week by week and evaluation criteria.

   ➔ Weekly Project Parts must be submitted on OnCourse / respective Team Folder by class time (6.00 PM)

6. **Final Project Report.** See *Project Description Document* for details on project tasks week by week and evaluation criteria.

   ➔ Weekly Project Parts must be submitted on OnCourse / respective Team Folder by class time (6.00 PM)

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**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 usability evaluation principles and methods.

2. **Analytic and Systematic work:** This course demands that students learn a methodic application of the usability principles and techniques taught in the course. This implies an analytic work in examining the usability related aspects of the application and a systematic application of the methods involved.

3. **Accountability:** Assignments and projects are not merely for learning but also a test of your character whereby diligence and accountability are required.

4. **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.

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

1. **Missing class WILL impact your grade.** All in-class students are allowed two (excused or unexcused) absences before their grade will be affected. In other words, whether you are sick or have personal problems or issues for missing class, it will amount to the same. Missing class means you do not show for the whole or majority of the session. The grade reduction policy works in this way.
   - On the **third missed class time your final grade will drop 15 points** (regardless of the reason) for every day of further absence.

2. **Each student is 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. 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:

- All assignments must be submitted through OnCourse at the designated time as stated on the project description document, or as communicated via email.
- **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.
- Incompletes will NOT be issued except under very extreme personal conditions that have been reviewed by the instructor and in consultation with the Dean’s Office.

**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. **Bringing 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. 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: http://life.iupui.edu/dos/code.htm).

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 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.
MISSION & STATEMENT OF VALUES

The Mission of IUPUI is to provide for its constituents excellence in Teaching and Learning, Research, Scholarship, and creative Activity, and Civic Engagement. With each of these core activities characterized by: 1) collaboration within and across disciplines and with the community, a commitment to ensuring diversity, and 3) pursuit of best practices. IUPUI’s mission is derived from and aligned with the principal components – Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices – of Indiana University’s Strategic Directions Charter.

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. IUPUI values the opportunities afforded by its location in Indiana’s capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community; both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship, as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.

BIBLIOGRAPHY AND ADDITIONAL RESOURCES

HCI GENERAL

- A good starting point for additional references on the topics covered in the class is the References section of the assigned academic papers and of the required and recommended textbooks.
- For an extensive HCI bibliography repository, see: http://hcibib.org
- Book website of Measuring the User Experience?, featuring additional resources, usability case studies and examples: http://measuringuserexperience.com
- Dr. Bolchini’s HCI Blog: http://bolchini.blogspot.com

THE USABILITY PROFESSIONALS’ PERSPECTIVE

Web, Interaction Design, and Usability-related newsletters, blogs, and sites. I suggest to periodically check these resources to gain novel insights in the field.

- Jakob Nielsen’s website: http://www.useit.com
- Bruce Tognazzini’s web resources: http://www.asktog.com/menus/designMenu.html
- User Interface Engineering and Jared Spool: http://www.uie.com
- Interaction Design at Cooper: http://www.cooper.com/journal
- Usability Professionals’ Association: http://www.upassoc.org

ACADEMIC CONFERENCES AND JOURNALS

- Interactions magazine on ACM Digital Library (papers accessible available from IUPUI campus network) - http://interactions.acm.org
- CHI Proceedings Series; the premiere annual conference in Human-Computer Interaction
- Human-Computer Interaction Journal: one of the leading journal in the HCI field. Papers (up to 2007) freely accessible through IUPUI library here. Website: http://hci-journal.com/
## I543 WEEKLY SCHEDULE – SPECIFIC DATES TBD BASED ON ACTUAL SEMESTER

<table>
<thead>
<tr>
<th>DATE</th>
<th>Reading Assignments Due &amp; Topics Covered</th>
<th>Lectures and Class Activity</th>
<th>Projects Part Due</th>
</tr>
</thead>
</table>
| **WK: 1**  | 1. Review Course Syllabus in detail  
2. Lecture Notes: Course Introduction and Foundations of Usability Evaluation  
3. JN Alert Box: Usability 101  
4. JN Alert Box: Misconceptions about Usability.                                                                                                                                 | Course introduction and topics overview. Team Formation and Project Kick-off.                  | Selection of interactive application to study  |
| Aug. 22    |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 2**  | 1. Stone’s Chapter 20: Why evaluation  
2. Lecture Notes: Scenario-based Reasoning and User Goals  
| Aug. 29    |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 3**  | 1. Nielsen’s Chapter 1 and 2 (PDFs on OnCourse>Resources).  
2. Stone’s Chapter 26: Inspections of the User Interface  
| Sept. 5    |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 4**  | 1. Paper: [MILE+](http://www.useit.com/papers/heuristic/heuristic_list.html) and MILE+ Heuristics Evaluation Library (See OnCourse>Resources).  
2. Analysis Template: [Modeling and Structuring Usability Problems](http://www.useit.com/papers/heuristic/heuristic_list.html) see OnCourse>Resources. File name: Template+for+Usability+Problem+Analysis.doc  
3. Paper: Structuring Usability Problems (See OnCourse>Resources)  
4. Paper: Business Goals and Usability Evaluation (See OnCourse>Resources) | Lecture/Reading discussion and project advising                                                | Scenario-based inspection (final)             |
| Sept. 12   |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 5**  | 1. Stone’s Chapter 9 up to pag. 184.  
2. Stone’s Chapter 16: GUI Design                                                                                                                                                                                                 | NO LECTURE (UPA NSF meeting)– project advising with assistant                                   | Heuristics inspection (progress)               |
| Sept. 19   |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 6**  | 1. Stone’s Chapter 17: Web Design Guidelines  
2. UIE J. Spool’s Report: The Scent of Information (See OnCourse>Resources)  
3. Nielsons’ chapter: “Usability problems Reports: Effectively Communicating with Developers” (See OnCourse>Resources). | Lecture/Reading discussion and project advising                                                | Heuristics inspection / Analysis and Consolidation (final)                                     |
| Sept. 26   |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 7**  | 1. Stone’s Chapter 28: Communicating the Findings  
3. Nielsen’s chapter: “Usability problems Reports: Effectively Communicating with Developers” (See OnCourse>Resources). | Lecture/Reading discussion and project advising                                                | Structuring and Reporting                      |
| Oct. 3     |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 8**  | 1. Kuniavski’s Ch. 10: Usability Tests (freely available online at IUPUI Library Website)  
2. Paper: Remote Usability Testing (See OnCourse>Resources)  
| Oct. 10    |                                                                                                                                                                                                                                          |                                                                                                |                                               |
| **WK: 9**  | 1. Paper: Remote Usability Testing (See OnCourse>Resources)  
3. Stone’s Chapter 22: Planning                                                                                                                                               | **FALL BREAK – NO CLASSES **                                                                  | Usability Testing Script draft  
Start Recruiting                                  |
Start Testing                                     |
| **WK: 10** | 1. Lecture Notes: Usability Testing Procedure and Tools [4_Usability_Testing_Annotations_DB_v.5.ppt]  
2. Tullis’ Chapter 4: Performance Metrics (PDFs on OnCourse>Resources)                                                                                                         | Lecture/Reading discussion and project advising                                                | Final Usability Testing Script  
Start Testing                                     |
<table>
<thead>
<tr>
<th>WK: 11</th>
<th>Oct. 31</th>
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<tbody>
<tr>
<td>1. Lecture Notes: Analysis of Usability Metrics</td>
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<td>2. Short Paper: Are 5 Users Enough? (See OnCourse&gt; Resources)</td>
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<tr>
<td>Lecture/Reading discussion and project advising</td>
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<tr>
<td>Evidence of ongoing usability testing results (at least 10 users)</td>
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<tr>
<th>WK: 12</th>
<th>Nov. 7</th>
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<tr>
<td>1. Stone’s Chapter 25: Analysis and Interpretation</td>
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<tr>
<td>2. Lecture Notes: Integrated Analysis of Inspection and Usability Testing</td>
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<tr>
<td>Lecture/Reading discussion and project advising</td>
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<tr>
<td>Final Usability testing results collected – cont.</td>
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<th>WK: 13</th>
<th>Nov. 14</th>
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<tbody>
<tr>
<td>Lecture/Reading discussion and project advising</td>
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<tr>
<td>Data Analysis</td>
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<tr>
<th>WK: 14</th>
<th>Nov. 21</th>
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<tr>
<td>1. Paper: B. Buxton, Usability Evaluation considered Harmful – Some of the time (See OnCourse&gt; Resources)</td>
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<tr>
<td>Lecture/Reading discussion and project advising</td>
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<td>Finalize Data Analysis &amp; Reporting</td>
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<th>WK: 15</th>
<th>Nov. 28</th>
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<tr>
<td>Final Project Class Presentation</td>
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<th>WK: 16</th>
<th>Dec. 5</th>
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<tr>
<td>In-depth Project Review Team by Team Recommendations and Overall reporting</td>
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<table>
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<tr>
<th>WK: 17</th>
<th>Dec. 12</th>
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<td></td>
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<tr>
<td>Final Project Report Delivery</td>
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Dec. 27 Final Fall Grades Available on OneStart (by Registrar)