Usability Testing and Product Design
Psychology 734
Spring 2019

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Office Hours: Mondays, 3:30 – 4:30 pm and by appointment
Class Time: Monday, 4:30-7:10 PM
Location: David King Hall 2073A

Course Outline

This course will cover a range of topics related to Human Factors in designing and evaluating systems, such as user analysis, design thinking, prototyping and usability testing. The course will also provide information about fundamental design principles, evaluation methods, usability testing strategies, and professional issues. Detailed information regarding the schedule of readings, assignments and topics by date can be found below and will be made available on Blackboard. Any schedule changes or changes in assignments will be announced in advance.

Course Objectives

The goal of the seminar is to introduce students to contemporary approaches used by usability researchers and professionals when designing and evaluating products that are functional, easy to use and at the same time enjoyable. This seminar consists of theoretical and practical parts: On the one hand, it informs about methods and the psychological background of usability research. On the other hand, it includes hands-on exercises, in which students can apply common usability methods to evaluate products currently on the market. In addition, students work on a semester project, in which they will go through the main steps of the user-centered design process (analysis, conceptualization, design, evaluation) in order to evaluate and improve a given product. The issues and techniques introduced in this seminar are intended for graduate students with interests in conducting academic or industry research. The primary objective is to provide students with valid, and marketable usability and design techniques that will be of benefit in both academic and industry settings.

Textbooks and Reading

No textbook is for this course but students are encouraged to search for additional materials online or in the library. Reading assignments consist of approximately 20 peer-reviewed journal articles and other published reports. All reading materials will be made available via blackboard during the semester. A detailed list of due dates for completing reading assignments can be found in the weekly schedule below. Students are encouraged to discuss the articles with classmates prior to class and to come to my office hours to discuss any of the topics related to the course, including reading assignments. All reading assignments should be completed before class.

Course Assignments

Weekly Assignments: Students will complete graded assignments to investigate usability issues (e.g., hall of shame / fame). In addition, there will be other assignments during the semester, including short presentations, and classroom assignments. All together, weekly assignments will contribute 35% towards the course grade.

Semester Project: Students will work on a usability project (**in groups**): they are asked to evaluate and improve (i.e., redesign) a given product. The project will be documented with a written report and oral presentation to the class. Details regarding the project will be provided in class. The project will contribute 55% towards the students' course grade.

Participation: Participation is essential, and students are encouraged to become active participants in class by reading course assignments, thinking about the readings, and raising interesting questions and comments. Students are also encouraged to engage with classmates and the professor outside the classroom. Participation in class will contribute 10% towards students' course grade.

Grading

Weekly assignments	35 points
Semester project	55 points
Participation	10 points
Overall	100 points

Letter Grade	Grade Points	Points
A+	4.00	100 - 95
A	4.00	94 - 90
A-	3.67	89 - 85
B+	3.33	84 - 80
B	3.00	79 - 75
C	2.00	74 - 70
F	0.00	69 - 0

Attendance

Because parts of the semester project will be worked on during class time, attendance at all scheduled seminars is required. Attendance is essential to successfully learn the concepts covered by this course. One unexcused absence will be allowed for each student, after which each additional unexcused absence will result in the loss of one letter grade per day. In addition, it is highly advised to contact me before all absences to accommodate any assignments or other graded material that might not be completed due to the absence. Any assignments that are delayed due to an unexcused absence will receive no credit unless other arrangements have been made in advance.

Cancellation Policy

In case class needs to be cancelled due to an unexpected event, students will be informed via email as soon as possible. Make-up sessions will be arranged for cancelled classes.

GMU Honor Code

George Mason University has an Honor Code that each student accepts as a condition of enrollment. This code is consistent with APA's ethical principles for working professionals, and it is required that each student adhere to the Honor Code. For this course, group collaboration is necessary and expected, but all students are required to produce original work on all assignments (other than the semester project) unless otherwise noted. Plagiarism, academic dishonesty, and other failures to follow the GMU honor code will result in disciplinary actions that are likely to include receiving a failing grade for this course, along with referral to the GMU Honor Committee for further review and documentation of the offense. A lack of knowledge about what constitutes a violation of the GMU honor code is not a defense against possible violations; it is your responsibility as a GMU student to review and adhere to this code. If you have any questions about plagiarism or the GMU honor code, please review the code at: http://academicintegrity.gmu.edu/honorcode/ or to see me so that I may provide clarification.

Performing at Your Best

Learning Accommodations: It is our policy to accommodate all students with disabilities that might affect their learning, course participation, or assignment completion. If you are a student with a disability and you need academic accommodations, please feel free to speak with me about making appropriate accommodations and contact the Disability Resource Center (DRC) at 703-993-2474, or online at http://ods.gmu.edu.

Stress and Academics: GMU is committed to helping students maintain their emotional well-being through the GMU Counseling and Psychological Services (CAPS) office, located online at: http://caps.gmu.edu/ and by telephone at: 703-993-2380. CAPS services are free to Mason students, and include one-on-one stress and anxiety counseling, and highly regarded Academic Skills Workshops that can teach students how to 'study smarter' and make the most of your investment in higher education.

Improving Academic Writing: Strong writing is a skill that is learned through guided instruction and practice. Students who seek to improve their academic writing are encouraged to do so by visiting the GMU Writing Center. Information can be found online at: http://writingcenter.gmu.edu/

Drop dates

Note that **January 29th** is the last day to add this class and **February 5th** is the last day to drop this class without penalty**.**

Weekly Schedule and Assignments

Weekly class meetings will generally be split into two sections: a discussion of assigned readings, followed by a lecture or classroom project activities. The schedule is tentative and the instructor reserves the right to make minor adjustments to the schedule of assignments. Changes will be announced in class.

Date	Topics	Reading & Assignments
01/21	**No Class – Martin Luther King Day**	
01/28	**Course Overview** Requirements, Syllabus, Project	
02/04	**Design of Usable Products: Introduction** *Article Discussion*	Nielsen (1992) Hassenzahl (2003) Hassenzahl (2011)
02/11	**Design of Usable Products: Knowing your User** *Article Discussion* **Semester Project:** Personas	**Hall of Fame/Shame: DUE** Wharton & Lewis (1994) Maguire (2002) Jordan (2000), Chapter 2
02/18	**Design of Usable Products: Knowing your Product** *Article Discussion* **Semester Project:** Competitor and Task Analysis	Kieras (1997) Maguire (2001)
02/25	**Design of Usable Products: What is good design?** *Article Discussion* **Semester Project:** Design Principles and Metrics	Tractinsky (2000) Gould (1985) Norman (1983) Pohlmeyer (2012)
03/04	**Practical Session** *Questions and Answers + Group Work on Semester Project*	**MEETING IN CLASS**

03/11	**SPRING BREAK**	**NO CLASS**
03/18	**MID TERM PRESENTATION**	**PRE-DESIGN PRESENTATION DUE**
03/25	**Usability Testing: Methods I** *Article Discussion* **Semester Project:** Design Evaluation	**Classroom Assignment 1** Nielsen & Molich (1990) Hornbaek (2006) Jordan (2000). Chapter 4: Methods
04/01	**Usability Testing: Methods II** *Article Discussion* **Semester Project:** Design Evaluation	Schiessl et al (2003) Rohn et al. (2002)
04/08	**Usability Testing: Methods III** *Article Discussion* **Semester Project:** Design Evaluation	Virzi (1992) Nielsen (1994). Chapter 6 Theofanos et al. (2005) ANSI-NCITS 354-2001 (2001)
04/15	**Design of Usable Products: Generating Ideas** *Article Discussion* **Semester Project:** Design Thinking	**Classroom Assignment 2** Brown (2008) Maiden (2004) TBA
04/22	**Design of Usable Products: Implementing Ideas** *Article Discussion* **Semester Project:** Prototyping	Lim et al. (2006) Mueller et al. (2016) Van der Lugt (2005)
04/29	**Practical Session** *Preparation of final report and presentation*	**NO MEETING IN CLASS**
05/06	**FINAL PRESENTATION**	**FINAL PRESENTATION AND REPORT DUE**

Communication and Technology

Official Communications via GMU Email: Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their mason email account, and are required to activate that account and check it regularly.

Technology: Projector and audio system (for videos) will be used to present slides with course material in class. Students need to bring the slides for the presentation of their semester project on a storage device. For the practical part, lab equipment (i.e. computer, keyboard, joystick) and a robot platform may be used.