UNIVERSITY OF WISCONSIN-MILWAUKEE
SCHOOL OF INFORMATION STUDIES

INFOST 547 – User-Centered Interaction Design

Syllabus

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CONTACTING THE INSTRUCTOR
The preferred method for contacting Kevin is by visiting the Request Center portal for this course at
https://askproftrainor.atlassian.net/servicedesk/customer/portal/8 . Implemented using JIRA Service
Desk, this portal will allow you to submit questions and requests related to this course. I anticipate that
using this portal instead of regular email will help me to respond to your requests more quickly and to
track them more effectively. PLEASE, DO NOT send requests to my regular email address.

In the event that the portal is unavailable to you, you may email your request to the Request Center at
the following address: infost547@askproftrainor.atlassian.net .

On an emergency basis, you may contact me using my mobile phone number: 847-650-9706.

ONLINE OFFICE HOURS / LAB SESSION
Every Thursday evening, I will be holding an Office Hours/Lab Session using the GoToMeeting
Platform. Please join us to review solutions to recent assignments, to ask a question, to get help
with your assignments, to discuss your plans for the final project, or just to say hello. Please use a
headset when joining this session. You may join the GoToMeeting session using this link.

MEETING TIMES
Online

COURSE DESCRIPTION
Introduce human-computer interaction theories and design processes. The emphasis is on applied
user experience (UX) design.

GENERAL DESCRIPTION
An introductory course in human-computer interaction, an integrated field of practice that is
informed by many areas including Interaction Design, Human Factors, Usability and User
Experience. The course builds a theoretical foundation for Interaction Design including
understanding and conceptualizing interaction, cognitive aspects, social interaction, emotional

interaction, and the nature of interfaces. Practical skills addressed include data gathering, data analysis, establishing requirements, prototyping, and evaluation.

PREREQUISITES
Graduate standing or senior undergraduate standing. For 500 and 600 level courses it is recommended that an undergraduate student first consult with the appropriate instructor and/or advisor concerning the applicability of this specific course.

OBJECTIVES
After completing this course, students should be able to:
- Articulate the theory and design practices that contribute to interaction design (Discussion; Issue Paper; Final Project).
- Articulate the cognitive, social, and emotional foundations of interaction design (Discussion; Issue Paper; Final Project).
- Assess a Web site's accessibility based upon well-established guidelines for accessibility (Web Accessibility Assessment).
- Demonstrate the ability to build prototypes at varying levels of fidelity, from paper prototypes to functional, interactive prototypes (The High-Fidelity Prototype; Final Project)
- Analyze and assess user interfaces by applying various usability criteria (The Identification of Good and Bad Interface; Usability Testing; Final project)
- Demonstrate the ability to conduct a full life cycle design project including identifying requirements, prototyping, and testing (Final Project).

ALA COMPETENCIES: [FOR MLIS COURSES ONLY]

4A. Information, communication, assistive, and related technologies as they affect the resources, service delivery, and uses of libraries and other information agencies.
4B. The application of information, communication, assistive, and related technology and tools consistent with professional ethics and prevailing service norms and applications.
4C. The methods of assessing and evaluating the specifications, efficacy, and cost efficiency of technology-based products and services.
4D. The principles and techniques necessary to identify and analyze emerging technologies and innovations in order to recognize and implement relevant technological improvements.

TIME EXPECTATIONS:

This course requires a weekly time commitment. General university guidelines indicate that a 3-credit course requires a minimum 144 hour time commitment over the semester. This time commitment represents a minimum of 9-10 hours of work per week per course. Three of these hours are lectures. Students are expected to do an additional 6-7 hours per week of study and work on assignments to achieve the learning goals of this course.

REQUIRED TEXTBOOK

Rogers, Y., Sharp, H., Preece, J. (2015) *Interaction Design: beyond human-computer interaction, 4th edition.* Wiley. ISBN : 978-1-119-02075-2

REQUIRED READINGS

Asselin, M., & Moayeri, M. (2010). New tools for new literacies research: an exploration of usability testing software. *International Journal of Research & Method in Education*, *33*(1), 41-53.

Dix, A. (2010). Human–computer interaction: A stable discipline, a nascent science, and the growth of the long tail. *Interacting with Computers*, *22*(1), 13-27.

Elling, S., Lentz, L., & De Jong, M. (2012). Combining concurrent think-aloud protocols and eye-tracking observations: An analysis of verbalizations and silences. *Professional Communication, IEEE Transactions on*, *55*(3), 206-220.

Fernandez, A., Insfran, E., & Abrahão, S. (2011). Usability evaluation methods for the web: A systematic mapping study. *Information and Software Technology*, *53*(8), 789-817.

Gonçalves, J., & Santos, C. (2011). POLVO-software for prototyping of low-fidelity interfaces in agile development. In *Human-computer interaction. Design and development approaches* (pp. 63-71). Springer Berlin Heidelberg.

Grudin, J. (2011). Human-computer interaction. *Annual review of information science and technology*, *45*(1), 367-430.

Hertzum, M., Molich, R., & Jacobsen, N. E. (2014). What you get is what you see: revisiting the evaluator effect in usability tests. *Behaviour & Information Technology*, *33*(2), 144-162.

Hollender, N., Hofmann, C., Deneke, M., & Schmitz, B. (2010). Integrating cognitive load theory and concepts of human–computer interaction. *Computers in Human Behavior*, *26*(6), 1278-1288.

Hornbæk, K. (2010). Dogmas in the assessment of usability evaluation methods. *Behaviour & Information Technology*, *29*(1), 97-111.

Hourcade, J. P. (2008). Interaction design and children. *Foundations and Trends in Human-Computer Interaction*, *1*(4), 277-392.

Huang, S. C., Bias, R. G., & Schnyer, D. (2015). How are icons processed by the brain? Neuroimaging measures of four types of visual stimuli used in information systems. *Journal of the Association for Information Science and Technology*, *66*(4), 702-720.

König, W. A., Rädle, R., & Reiterer, H. (2010). Interactive design of multimodal user interfaces. *Journal on Multimodal User Interfaces*, *3*(3), 197-213.

Lee, Y., & Chen, A. N. (2011). Usability design and psychological ownership of a virtual world. *Journal of Management Information Systems*, *28*(3), 269-308.

Leuthold, S., Bargas-Avila, J. A., & Opwis, K. (2008). Beyond web content accessibility guidelines: Design of enhanced text user interfaces for blind internet users. *International Journal of Human-Computer Studies*, *66*(4), 257-270.

Lopatovska, I., & Arapakis, I. (2011). Theories, methods and current research on emotions in library and information science, information retrieval and human–computer interaction. *Information Processing & Management*,*47*(4), 575-592.

McDonald, S., Edwards, H. M., & Zhao, T. (2012). Exploring think-alouds in usability testing: An international survey. *Professional Communication, IEEE Transactions on*, *55*(1), 2-19.

Miaskiewicz, T., & Kozar, K. A. (2011). Personas and user-centered design: How can personas benefit product design processes?. *Design Studies*,*32*(5), 417-430.

O'Brien, H. L., & Toms, E. G. (2010). The development and evaluation of a survey to measure user engagement. *Journal of the American Society for Information Science and Technology*, *61*(1), 50-69.

Olmsted-Hawala, E. L., Murphy, E. D., Hawala, S., & Ashenfelter, K. T. (2010, April). Think-aloud protocols: a comparison of three think-aloud protocols for use in testing data-dissemination web sites for usability. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 2381-2390). ACM.

Palanque, P., Ladry, J. F., Navarre, D., & Barboni, E. (2009). High-Fidelity prototyping of interactive systems can be formal too. In *Human-Computer Interaction. New Trends* (pp. 667-676). Springer Berlin Heidelberg.

Petrie, H., & Bevan, N. (2009). The evaluation of accessibility, usability and user experience. *The universal access handbook*, 10-20.

Sahib, N. G., Tombros, A., & Stockman, T. (2012). A comparative analysis of the information-seeking behavior of visually impaired and sighted searchers. *Journal of the American Society for Information Science and Technology*, *63*(2), 377-391.

Shackel, B. (2009). Usability–Context, framework, definition, design and evaluation. *Interacting with Computers*, *21*(5-6), 339-346.

Stefano, F., Borsci, S., & Stamerra, G. (2010). Web usability evaluation with screen reader users: implementation of the partial concurrent thinking aloud technique. *Cognitive processing*, *11*(3), 263-272.

Xie, I., Babu, R., Joo, S. & Fuller, P. (2015). Using digital libraries non-visually: understanding the help seeking situations of blind users. *Information Research,* 20(2), paper 673. Retrieved from http://InformationR.net/ir/20-2/paper673.html

Yamamoto, Y., & Nakakoji, K. (2005). Interaction design of tools for fostering creativity in the early stages of information design. *International Journal of Human-Computer Studies*, *63*(4), 513-535.

Zhang, P., & Soergel, D. (2014). Towards a comprehensive model of the cognitive process and mechanisms of individual sensemaking. *Journal of the Association for Information Science and Technology*, *65*(9), 1733-1756.

Zhou, J., Rau, P. L. P., & Salvendy, G. (2012). Use and design of handheld computers for older adults: A review and appraisal. *International Journal of Human-Computer Interaction*, *28*(12), 799-826.

SOFTWARE

Students will be expected to use software during the course when doing activities like usability studies and prototyping. Rather than require that students only use one product for a particular activity, a list of acceptable products will be discussed with the class before each assignment. Students may recommend additional software choices. These recommendations will be subject to review and approval by the instructor.

INSTRUCTIONAL METHODS

Lecture, discussion, and demonstrations.

Students with special test and note-taking needs should contact the instructor as early as possible for accommodations.

COURSE SCHEDULE

The schedule for this course will be available via our Weekly Schedule at:

> http://courseinfo.ligent.net/2018sp/_uwm/infost547_201_202/index.html

The course schedule is always subject to reasonable change to account for changes in circumstance and to correct errors. When I make changes to the schedule, I will announce them via D2L Announcements and email.

ASSIGNMENTS

Course Elements:

1. *Readings*

   Required readings will be assigned from the resources listed above and from other resources that will be identified in the schedule. Generally, readings are chosen to accompany any lecture or demonstration for the week. So, you should expect to complete the readings before the lecture or demonstration.

   Optional readings will be assigned from time to time. These will typically represent alternate expressions of the same material, or interesting supplementary topics.

2. *Practice Assignments*

   A number of practice assignments will be due at regular intervals throughout the semester. These have been designed to provide you with an opportunity to practice individual skills learned during the course prior to utilizing those skills in the Final Project (see below).

Practice assignments will include the following:

    a.   The Identification of Good and Bad Interface

        Everyone is required to present one best or worst interface in class. The presentation should be 5 -7 minutes and discuss the interface features. Students need to justify their arguments about why it is good or bad by applying what you have learned in class.

    b.   The High-Fidelity Prototype

        Build a high-fidelity prototype of an application that you choose (e.g. shopping, travel, searching). Students can choose to use tools taught or recommended in class. In addition, create a tutorial about how to use the prototype with justification.

    c.   Usability Testing

        Conduct a usability test on a selected user interface. Students need to recruit 3 to 5 subjects, and create multiple data collection instruments including questionnaire, think aloud and interview. Data analysis needs to focus on how to improve the design of the interface.

Fuller assignment descriptions, instructions, and grading rubrics will be provided separately.

3. *Issue Paper (Graduate Students Only)*
    Each graduate student will write a research paper regarding a specific issue of human-computer interaction, such as how to design for people with disabilities, the pros and cons of different prototyping approaches. The emphasis is on the identification of challenges of the issue and how to solve these challenges. Your paper should be about 1500 to 2000 words. In addition, you need to cite a minimum of 10 sources.

    Detailed instruction of the paper will be provided separately.

4. *Final Project*
    Each student will plan and execute a full life cycle project including identification and analysis of users and requirements, preliminary design, low-fidelity and high-fidelity prototyping, testing, presenting the completed project to the class. Projects will be proposed by students and will represent either real or simulated workplace scenarios.

    Project submissions will consist of the following:

    - Project Proposal
    - Project Report

    Overall project requirements, instructions for individual deliverables, and grading rubrics for individual deliverables will be provided separately.

5. *Class Participation*

    a. Each student is expected to contribute 4 significant (300 – 400 word) posts to the discussion forums for the class. These should include:

        i. 1 post to the *Introduce Yourself Forum* during Week 1 of the semester.

        ii. 3 posts to the *Articles Discussion Forum* during the semester. Each of these posts should summarize the findings of the paper and discuss the implications of those findings for the interaction design practitioner. To qualify, posts must be made by the week closing deadline for the week in which the article has been assigned.

    b. Each student is expected to read all posts of other students made in all discussion forums and respond with short posts when appropriate.

    c. Every Thursday evening, I will be holding an Office Hours/Lab Session using the GoToMeeting Platform. Please join us to review solutions to recent assignments, to ask a question, to get help with your assignments, to discuss your plans for the final project, or just to say hello. Please use a headset when joining this session. You may join the GoToMeeting session using this link. Additional participation credit will be given to those students who attend Online Office Hours sessions and participate.

EVALUATION

Evaluation	Undergraduate Students	Graduate Students
Practice Assignments The Identification of Good and Bad Interface Web Accessibility Assessment The High-Fidelity Prototype Usability Testing	40% 5% 10% 10% 15%	30% 5% 5% 7% 13%
Issue Paper	N/A	20%
Final Project	40%	30%
Class Participation	20%	20%
Total	100%	100%

GRADING SCALE

96-100	A	74-76	C
91-95	A-	70-73	C-
87-90	B+	67-69	D+
84-86	B	64-66	D
80-83	B-	60-63	D-
77-79	C+	Below 60	F

UWM AND SOIS ACADEMIC POLICIES

The following links contain university policies affecting all SOIS students. Many of the links below may be accessed through a PDF-document maintained by the Secretary of the University: http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf. Undergraduates may also find the *Panther Planner and Undergraduate Student Handbook* useful (http://www4.uwm.edu/osl/students/).

Students With Disabilities
If you will need accommodations in order to meet any of the requirements of a course, please contact the instructor as soon as possible. Students with disabilities are responsible to communicate directly with the instructor to ensure special accommodation in a timely manner. There is comprehensive coverage of issues related to disabilities at the Student Accessibility Center (http://www4.uwm.edu/sac/), important components of which are expressed here: http://www.uwm.edu/Dept/DSAD/SAC/SACltr.pdf.

Religious Observances
Students' sincerely held religious beliefs must be reasonably accommodated with respect to all examinations and other academic requirements, according to the following policy: http://www4.uwm.edu/secu/docs/other/S1.5.htm. Please notify your instructor within the first three weeks of the Fall or Spring Term (first week of shorter-term or Summer courses) of any specific days or dates on which you request relief from an examination or academic requirement for religious observances.

Students Called to Active Military Duty
UWM has several policies that accommodate students who must temporarily lay aside their educational pursuits when called to active duty in the military (see http://www4.uwm.edu/academics/military.cfm), including provisions for refunds, readmission, grading, and other situations.

Incompletes
A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantial cause beyond the student's control, has been unable to take or complete the final examination or some limited amount of other term work. An incomplete is not given unless the student proves to the instructor that s/he was prevented from completing course requirements for just cause as indicated above (http://www4.uwm.edu/secu/docs/other/S31.pdf).

Discriminatory Conduct (such as sexual harassment)
UWM and SOIS are committed to building and maintaining a campus environment that recognizes the inherent worth and dignity of every person, fosters tolerance, sensitivity, understanding, and mutual respect, and encourages the members of its community to strive to reach their full potential. The UWM policy statement (http://www4.uwm.edu/secu/docs/other/S47.pdf) summarizes and defines situations that constitute discriminatory conduct. If you have questions, please contact an appropriate SOIS administrator.

Academic Misconduct
Cheating on exams and plagiarism are violations of the academic honor code and carry severe sanctions, ranging from a failing grade for a course or assignment to expulsion from the University. See the following document (http://www4.uwm.edu/osl/dean/conduct.cfm) or contact the SOIS Investigating Officer (currently the Associate Dean) for more information.

Complaints
Students may direct complaints to the SOIS Dean or Associate Dean. If the complaint allegedly violates a specific university policy, it may be directed to the appropriate university office responsible for enforcing the policy   (http://www4.uwm.edu/secu/docs/other/S49.7.htm).

Grade Appeal Procedures
A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow SOIS appeal procedures for undergraduates as seen here: (http://www4.uwm.edu/sois/programs/graduate/mlis/policies/appeals.cfm) In the case of a graduate student, the Graduate School, (http://www4.uwm.edu/sois/programs/undergraduate/ug_appeals.cfm).

Last Revised
2018-01-25