OHSU

Portland Campus · School of Medicine

Human Compu Interaction Biomed

BMI-548

Summer 2019   3 Credits   06/24/2019 to 09/13/2019   Modified 05/09/2019

🖥️ Description

This course will provide an overview of the principles and tools of HCI design and evaluation techniques. It will consist of 6 weeks of online lectures, directed readings, discussions and term project milestones. The online portion will be followed by one week on campus and the completion of the term project. The on-campus portion of the course will include lectures, hands on usability activities and time for working on the class project. Topics to be covered include:

- User centered design
  - Iterative process of design
  - Requirements gathering
  - Prototyping
  - Development
  - Evaluation
- Principles of good interface design
  - Cognitive processes affecting usability
  - Design guidelines
  - Designing for accessibility
- Evaluation
  - Quantitative
  - Qualitative
  - Think-aloud protocols
  - Discount usability testing
- Emerging interfaces
- Usability of biomedical applications
- Research topics in HCI

Prerequisite: None

Offering: On Campus: Hybrid Course, August

👤 Contact Information

Instructor: Michelle R. Hribar PhD

Email: hribarm@ohsu.edu

Instructor: Michael F. Chiang MD

Email: chiangm@ohsu.edu

🕐 Meeting Times

Off Campus

July 8 - August 23, 2019

On Campus

August 24 - 28, 2019
BICC 124

9:00 am - 4:00 pm

📘 Materials

There are no required textbooks for this class--your required reading will be articles that will be posted on Sakai. We will cover some content from each of the following optional books; it is up to you if you think you would benefit from purchasing them.

User Interface Design and Evaluation

Author: Debbie Stone, Caroline Jarrett, Mark Woodroffe and Shailey Minocha
Publisher: Morgan Kaufman, 2005
ISBN: 978-0120884360
Optional

Unfortunately, this book has never been updated, but it still remains the most comprehensive text on user-centered design. The principles are still relevant even if the examples are outdated.

Don't Make Me Think Revisited: A Common Sense Approach to Web and Mobile Usability

Author: Steve Krug
Publisher: New Riders, 2014
ISBN: 978-0321965516
Optional

The Design of Everyday Things: Revised and Expanded Edition

Author: Donald Norman
Publisher: Basic Books, 2013
ISBN: 978-0465050659
Optional

◎ Course Goals

The goals of this course are to become familiar with user-centered design, general principles of good design, and techniques for evaluating user interfaces. These concepts will be presented in readings and lectures, and applied in a hands-on course project.

📊 Course Competencies, Outcomes, and Objectives

Course Project

Students will work on redesigning a healthcare information system (the IRIS Registry). The goal is to design or redesign the interface for one of three uses cases, create a prototype and then to plan an evaluation of that design/redesign. The project paper should consist of four sections:

1. Description of the information system and the use case.
2. Requirements.
3. Initial design/prototype and final design/prototype, including design rationales for both.

4. Design of the task-specific evaluation of the information system.

✔ Assessment

Criteria

The class will assessed for participation in online discussions, completion of 4 project milestones, an in class presentation and the submission of the final project.

Breakdown

The course grade will be weighted as follows:

- Participation/discussion 15%
- Milestones 20%
- In-Class Presentation 30%
- Final Term Project 35%

Grade	Range	Notes
A	93-100	
A-	90 - 92.99	
B+	87- 89.99	
B	83 - 86.99	
B-	80 - 82.99	
C+	77 - 79.99	
C	73 - 76.99	
C-	70 - 72.99	
F	< 70	

💬 Course & Instructor Evaluations

📅 Schedule

When	Topic	Notes	
Off Campus	Weekly Topics	Week 1	Introduction to User Interfaces & Usability
		Week 2	User Requirements
		Week 3	Prototyping
		Week 4	Design Principles
		Week 5	Interaction Design
		Week 6	Evaluation

When	Topic	Notes		
On Campus	Tentative Schedule of Topics	Day 1 AM	Introduction	Course Overview Iris Overview Evaluation Overview
		Day 1 PM	Prototyping	Storyboarding Prototyping Time for Group Projects
		Day 2 AM	Special Considerations	Design for Disabilities Use of Color
		Day 2 PM	Inspection Methods	Expert Reviews Heuristic Evaluation Inspection of Group Projects
		Day 3 AM	More Evaluation	Formal Evaluation Informal Methods: Think Aloud, Discount Usability Testing
		Day 3 PM	Special Topics	Data Visualization Eye Tracking Demo Informal Evaluation of Group Projects
		Day 4 AM	HCI in Healthcare	Current Challenges Future Directions Discussion
		Day 4 PM	HCI in Healthcare, Contd.	More Discussion Preparation for Group Presentations
		Day 5 AM	Group Presentations	Groups 1 & 2 Present
		Day 5 PM	Group Presentations	Groups 3 & 4 Present Course Wrap-Up

✳ Course Policies and Resources

Hybrid Course Attendance

Students taking hybrid courses MUST BE IN ATTENDANCE each day of the on campus session.

Late Assignment Submissions

Because assignments in this course build upon one another, it will be important to keep up. Assignments will be due at 11:59 PT on the deadline date. If you have difficulties with any deadlines, please discuss contact all of the instructors in advance. Otherwise, late assignments will be penalized 25% if they are submitted after the deadline, an additional 25% if they are submitted more than 1 week after the deadline, and an additional 25% for every week after that.

🏛 School Policies and Resources

Graduate Studies Guidelines:

Students are responsible for following all OHSU School of Medicine, Graduate Studies, and program/department guidelines & policies. For more information, please visit here (https://www.ohsu.edu/xd/education/schools/school-of-medicine/academic-programs/graduate-studies/admin-resources.cfm). For program/department guidelines & policies, please inquiry with the

program/department director and/or coordinator.

School of Medicine Conduct Policy (housed under the graduate studies guidelines section)

Students are responsible for their own academic work. Students are expected to have read and practice principles of academic honesty, as presented in the [Graduate Studies Student Handbook. (http://www.ohsu.edu/xd/education/schools/school-of-medicine/academic-programs/graduate-studies/admin-resources.cfm)](http://www.ohsu.edu/xd/education/schools/school-of-medicine/academic-programs/graduate-studies/admin-resources.cfm)

The School of Medicine reserves the privilege of retaining only those students who, in the judgement of the faculty, satisfy the requirements of scholarship and clinical performance necessary to maintain the highest standards. The Student Handbook has information about academic standards and probation and dismissal policies.

Grading Criteria, Academic Standards, & Release of Final Grades:

Graduate Studies in the OHSU School of Medicine is committed to providing grades to students in a timely manner. Course instructors will provide students with information in writing at the beginning of each course that describes the grading policies and procedures including but not limited to evaluation criteria, expected time needed to grade individual student examinations and type of feedback they will provide.

All coursework applied towards degree requirements must meet the minimum cumulative grade point average of at least 3.0.

Refer to the School of Medicine Graduate Studies Forms & Policies for withdraw, incomplete, and in-progress grading standards. Final course grades will be posted with the OHSU Registrar the Monday following the last day of the term. On those occasions when a grade has not been submitted by the deadline, the following procedure shall be followed:

1. The Department*/Program** Coordinator will immediately contact the Instructor requesting the missing grade, with a copy to the Program Director and Registrar.
2. If the grade is still overdue by the end of next week, the Department*/Program** Coordinator will email the Department Chair directly, with a copy to the Instructor and Program Director requesting resolution of the missing grade.
3. If, after an additional week the grade is still outstanding, the student or Department*/Program** Coordinator may petition the Office of Graduate Studies for final resolution.

*For courses that are run by a specific department.

**For the conjoined courses (course number is preceded by CON) that are run by Graduate Studies.

Graduate Studies Inclement Weather Procedures

Inclement weather procedures can be [found here (http://www.ohsu.edu/xd/about/visiting/weather/index.cfm)](http://www.ohsu.edu/xd/about/visiting/weather/index.cfm). In the case of inclement weather, the faculty member will email or place a voice-mail greeting on her/his office telephone number by 6:00am on the day of the clinical or class to give instructions to students about the class schedule.

Graduate Studies Copyright Information

Every reasonable effort has been made to protect the copyright requirements of materials used in this course. Class participants are warned not to copy, audio, or videotape in violation of copyright laws. Journal articles will be kept on reserve at the library or online for student access. Copyright law does allow for making one personal copy of each article from the original article. This limit also applies to electronic sources.

DMICE Communication Policy

1. If the syllabus directs the student to contact the TA before contacting the instructor, the student should do so. Otherwise, the student should contact the instructor and allow 2 business days (not including weekends) for a response.
2. If the student does not receive a response from the instructor within 2 business days, s/he should contact the TA (if there is one). When contacting the TA s/he should cc the instructor and Diane Doctor at doctord@ohsu.edu.
3. If a student does not receive a response from the TA within 1 business day (not including weekends), s/he should contact Diane Doctor at doctord@ohsu.edu and cc the instructor and the TA.
4. If Diane does not reply within 1 business day (not including weekends), the student should contact Andrea Ilg at ilgan@ohsu.edu.
5. Students having difficulties with Sakai should contact the Sakai Help Desk at sakai@ohsu.edu or at (877) 972-5249. Sakai

help is available M-F from 8am to 10-pm and weekends from Noon to 5pm. Do not contact the instructor.

When Problems Arise

It is critical to contact the appropriate person when problems arise:

- For basic Sakai problems and course issues (e.g., cannot log in, after-hours technical assistance, Course Materials or Forum not available/accessible during regular business hours/days), contact the Sakai Help Desk: Toll-Free - (877) 972-5249; email - sakai@ohsu.edu. Sakai help is available M-F from 8 am to 9 pm and weekends from Noon to 5pm.

- For questions about course content (e.g., do not understand a topic or disagree with homework quiz answer), contact the Teaching Assistant, who will be announced at the beginning of the course: go to the Email Tab after logging into the course and choose "Associate" role to send message to the TA or post a question in the Forums.

Examination Policy

It is OHSU policy that any exam offered online and worth more than 10% of the final course grade must be virtually proctored. In this course, we will be using the services of Examity, a remote proctoring services company. You will be required to schedule your exam three (3) weeks ahead of time. There is no cost to the student. More information will be provided to you regarding setup, scheduling, and requirements in the Course Materials.

[Policy number: 02-70-050 ((http%3A/www.ohsu.edu/xd/education/student-services/academic-programs-and-assessment/academic-policy/approved-policies/upload/Online-Exam-Proctoring-02-70-050.pdf))](http://www.ohsu.edu/xd/education/student-services/academic-programs-and-assessment/academic-policy/approved-policies/upload/Online-Exam-Proctoring-02-70-050.pdf)

Turn It In

In an effort to uphold the principles and practice of academic honesty, faculty members at OHSU may use originality checking systems such as Turnitin to compare a student's submitted work against multiple sources. To protect student privacy in this process, it will be necessary to remove all personal information, i.e. student name, email address, student u-number, or any other personal information, from documents BEFORE submission.

Sakai and TLC Help Desk

You will learn through the Sakai learning management software at http://sakai.ohsu.edu. () The online component includes reading material, lectures (including streaming presentations and handouts), project material, learning assignments, and online discussions. If you have any technical questions or if you need help logging in, please contact the Sakai Help Desk, which is open Mon – Fri, 8 am – 9 pm and weekends 12 pm – 5 pm, Pacific Time.

Contact Information:

(Toll-free) 877-972-5249

(Web) http://atech.ohsu.edu/help

(Email) [sakai@ohsu.edu (mailto:sakai@ohsu.edu)](mailto:sakai@ohsu.edu)

Online Etiquette

Please use professional etiquette when communicating with peers and the instructor. This means avoiding aggressive or offensive language, showing respect for others' opinions and positions, and conducting yourself as if you were face to face with them. Please pay special attention to etiquette in class forums and when using email. If you notice someone violating this policy, please make the instructor and TA aware of the problem.

✺ School Competencies

🌐 OHSU Competencies

OHSU Graduation Core Competencies

Professional Knowledge and Skills

- Demonstrate competence in the core knowledge, skills, and practices as defined by degree programs and relevant professional licensing and credentialing boards.

Reasoning and Judgement

- Demonstrate the ability to identify and define problems, critically compare options, make timely decisions or recommendations, identify uncertainties, and use findings to improve outcomes in light of evolving evidence.

Evidence-Based Practice and Research

- Demonstrate the ability to access, evaluate, and apply relevant science knowledge to support evidence-based health care, disease prevention, health promotion and discovery.

Lifelong Learning

- Demonstrate the ability to recognize gaps in knowledge and experience through informed self-assessment and reflective practices, and take actions to address those gaps.

Communication

- Demonstrate active listening and oral and written communication skills with diverse individuals, communities, and colleagues to ensure effective, culturally appropriate exchange of information.

Professionalism and Ethics

- Demonstrate integrity, honesty, knowledge of ethical principles and the standards of professional conduct, and the ability to apply ethical principles in clinical care, research, education or community service.

Teamwork

- Demonstrate the abilities required to foster and work effectively within collaborative, team-based environments.

Safety and Quality Improvement

- Demonstrate the ability to identify situations that compromise safety and participate in risk reduction and continuous quality improvement.

Systems

- Demonstrate an appropriate understanding of evolving health care systems, health and science policy, and resource allocation in order to optimize human health and scientific discovery.

Patient/Client-Centered Care *(Additionally, clinical degree program graduates will be able to...)*

- Demonstrate the ability to collaborate with diverse individuals, families, and communities to provide quality care that is respectful of and responsive to their preferences, needs, attitudes, beliefs and values.

🏛 Institutional Policies and Resources

Statement Regarding Students with Disabilities:

OHSU is committed to inclusive and accessible learning environments in compliance with federal and state law. If you have a disability or think you may have a disability (mental health, attention-related, learning, vision, hearing, physical or health impacts) contact the Office for Student Access at (503) 494-0082 or OHSU Student Access (mailto:studentaccess@ohsu.edu) to have a confidential conversation about academic accommodations. Information is also available at Student Access Website (http://www.ohsu.edu/student-access). Because accommodations may take time to implement and cannot be applied retroactively, it is important to have this discussion as soon as possible.

Portland State students also have similar resources available via the PSU Disability Resource Center (website http://www.pdx.edu/drc (http://www.pdx.edu/drc)). Please contact the DRC at tel. (503) 725-4150 or email at drc@pdx.edu (mailto:drc@pdx.edu)

Student Evaluation of Courses:

Course evaluation results are extremely important and used to help improve courses and the learning experience of future students. Responses will always remain anonymous and will only be available to instructors after grades have been posted. The results of scaled questions and comments go to both the instructor and their unit head/supervisor. Refer to Student Evaluation of Courses and Instructional Effectiveness, *Policy No. 02-50-035 (https://o2.ohsu.edu/policies-and-compliance/ohsu-policy-manual/chapter-2-student-affairs/ohsu-policy-02-50-035.cfm).

*To access the OHSU Student Evaluation of Courses and Instructional Effectiveness Policy, you must log into the OHSU O2 website (https://o2.ohsu.edu/).

Copyright Information:

Copyright laws and fair use policies protect the rights of those who have produced the material. The copy in this course has been provided for private study, scholarship, or research. Other uses may require permission from the copyright holder. The user of this work is responsible for adhering to copyright law of the U.S. (Title 17, U.S. Code). To help you familiarize yourself with copyright and fair use policies, the University encourages you to visit its Copyright Web Page (https://www.ohsu.edu/xd/education/library/services/copyright/)

Sakai course web sites contain material protected by copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with copyright law and/or with permission given by the owners of the original material. You may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that you (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material. Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

Syllabi Changes and Retention:

Syllabi are considered to be a learning agreement between students and the faculty of record. Information contained in syllabi, other than the minimum requirements, may be subject to change as deemed appropriate by the faculty of record in concurrence with the academic program and the Office of the Provost. Refer to the *Course Syllabi Policy, 02-50-050. (https://o2.ohsu.edu/policies-and-compliance/ohsu-policy-manual/chapter-2-student-affairs/ohsu-policy-02-50-050.cfm)

*To access the OHSU Course Syllabus Policy, you must log into the OHSU O2 website (https://o2.ohsu.edu/).

Commitment to Diversity & Inclusion:

OHSU is committed to creating and fostering a learning and working environment based on open communication and mutual respect. If you encounter sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, veteran's status, ancestry, sex, marital status, pregnancy or parenting status, sexual orientation, gender identity, disability or any other protected status please contact the Affirmative Action and Equal Opportunity Department at 503-494-5148 or aaeo@ohsu.edu (mailto:aaeo@ohsu.edu). Inquiries about Title IX compliance or sex/gender discrimination and harassment may be directed to the OHSU Title IX Coordinator at 503-494-0258 or titleix@ohsu.edu. (mailto:titleix@ohsu.edu.)

Modified Operations, Policy 01-40-010:

Students should review the Student Portal, O2, or call OHSU's weather alert (https://www.ohsu.edu/xd/about/visiting/weather/) line at 503-494-9021 for the most up-to-date information on OHSU-wide modified operations which include but are not limited to delays or closures for inclement weather. For specific campus information, outside of Portland, check the following sites:

- Ashland Campus: SOU Inclement Weather (https://inside.sou.edu/hrs/inclement-weather.html)
- Klamath Fall Campus: OIT Inclement Weather (http://www.oit.edu/inclement-weather)
- La Grande Campus: EOU Inclement Weather Update (https://www.eou.edu/news-press/campus-status-and-weather-

updates/)
- Monmouth Campus: WOU Inclement Weather (http://www.wou.edu/hr/resources/policies/campus-inclement-weather-notice)

OHSU Resources Available to Students*:

Registrar's Office
Mackenzie Hall, Rm. 1120
503-494-7800; Email the Registrar (mailto:regohsu@ohsu.edu)

Student Registration Information:
To Register for Classes (http://www.ohsu.edu/xd/education/student-services/registrar/registration-information/index.cfm)

OHSU ITG Help Desk
Regular staff hours are 6 a.m. to 6 p.m., Monday through Friday, but phones are answered seven days a week, 24 hours a day. Call 503 494-2222.

Teaching and Learning Center
Academic Support Counseling and Sakai Course Management System, please contact the TLC Help Desk at 877-972-5249 or email TLC Help Desk (mailto:sakai@ohsu.edu)

Concourse Syllabus Management
For help with accessing your Concourse Syllabus: Please contact the Sakai help Desk for all other Concourse inquiries please visit the Concourse Tutorial Website (https://o2.ohsu.edu/educational-improvement-and-innovation/concourse-syllabus-management.cfm) or please contact the Mark Rivera at rivermar@ohsu.edu (mailto:rivermar@ohsu.edu)or call 503-494-0934

Public Safety

OHSU Public Safety (https://www.ohsu.edu/xd/about/services/public-safety/)

- Emergency on Campus: 503-494-4444 (Portland)
- Non-emergency: 503-494-7744; Contact Public Safety (mailto:pubsafe@ohsu.edu)

SOU - Ashland Campus Public Safety (https://inside.sou.edu/security/index.html)

- For Emergencies dial 911
- Officer Assistance: (541) 552-6911

WOU - Monmouth Campus Public Safety (http://www.wou.edu/safety/)

- Emergency: 503-838-9000
- Main Office (Open 24/7): 503-838-8481

EOU - La Grande Campus Public Safety (https://www.eou.edu/emergency/)

- Emergency: 911
- Camus Security Non Emergency: 541-962-3911

OIT - Klamath Falls Campus Public Safety (https://www.oit.edu/faculty-staff/campus-safety)

- Emergency: 911 or 541-885-0911
- Camus Security Non Emergency: 541-885-1111

*Joseph B. Trainer Health & Wellness Center
Baird Hall, Rm. 18 (Primary Care) and Rm. 6 (Behavioral Health)
503-494-8665; For urgent care after hours, 503-494-8311 and ask for the Nurse on call.
Wellness Center Information (mailto:askjbthealth@ohsu.edu)
Wellness Center Website (http://www.ohsu.edu/xd/education/student-services/joseph-trainer-health-wellness-center/)

Exceptions include Public Health students who have selected PSU as their primary providers and students whose home campus is a satellite campus or online. If your home institution is not on the Portland campus, contact your home institution student support services for more information.

Ombudsman Office
Gaines Hall, Rm. 117
707 SW Gaines Street, Portland, OR 97239
503-494-5397; Contact Ombudsman (mailto:graybill@ohsu.edu); Ombudsman Website (https://www.ohsu.edu/xd/about/services/ombudsman/)

Library: Biomedical Information Communication Center
BICC Library Hours of Operation (http://www.ohsu.edu/xd/education/library/about/hours.cfm)

Additional Items