

**UNIVERSITY OF REGINA**  
**Department of Computer Science**

**CS 490DG – User Interface Evaluation Methods**  
**Winter 2021**

Instructor: **Dr. Orland Hoerber**  
Lectures: **W 10:30 – 1:15 PM (online)**  
Webpage: **<http://www.cs.uregina.ca/~hoeber/teaching/cs490DG/>**  
Email: **orland.hoeber@uregina.ca**

Office Hours: **W 2:00 – 3:30 PM (other times by appointment)**  
Office: **online (Zoom)**

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### **Course Objectives**

Methods for evaluating user interfaces with human subjects. Topics include research ethics, research methods, experimental design, data collection, and data analysis.

*This course is classified as a zero-cost teaching material course (ZCM). All of the readings and resources are available electronically through the University Library.*

### **Primary Reference**

D. Kelly, Methods for evaluating interactive information retrieval systems with users, Foundations and Trends in Information Retrieval 3 (1-2) (2009) 1-224.  
<http://dx.doi.org/10.1561/1500000012>

### **Supplemental Readings**

Sheelagh Carpendale. Evaluating information visualizations. In A. Kerren, J. T. Stasko, J.-D. Fekete, and C. North, editors, Information Visualization: Human-Centered Issues and Perspectives, LNCS 4950, pages 19-45. Springer, 2008.  
[https://doi.org/10.1007/978-3-540-70956-5\\_2](https://doi.org/10.1007/978-3-540-70956-5_2)

Orland Hoerber, User evaluation methods for visual web search interfaces, In Proceedings of the International Conference on Information Visualization, pp. 139-145, 2009. <https://doi.org/10.1109/IV.2009.21>

I. Scott MacKenzie, Human-Computer Interaction: An Empirical Research Perspective. Morgan Kaufmann, Waltham, MA, 2013. (Chapters 4-6)

**Evaluation**

The final grade in the course will be determined as follows:

Participation and Contribution		5%
A1: Study Design	(T Feb 23)	25%
A2: REB Application	(T Mar 2)	15%
A3: Pilot Test	(T Mar 23)	10%
A4: Data Analysis	(T Apr 6)	10%
A5: Poster Presentation	(W Apr 14)	10%
Final Exam	(W Apr 21)	25%
<b>Total</b>		<b>100%</b>

\* In order to pass the course, you must pass the exam.

\* Your final mark may be adjusted by +/- 5%, at the instructor's discretion.

**Course Schedule & Topics (Tentative)**

Topic	Date	Topics
0	Jan 13	<i>Introduction &amp; Syllabus Review</i>
1	Jan 13	<i>Why Evaluate Interfaces with Human Subjects?</i> Readings: Kelly: Ch 1 – 3
2	Jan 20	<i>Survey of Approaches</i> Readings: Kelly: Ch 4; Hoerber (2009)
3	Jan 27	<i>Foundations of Research Methods</i> Readings: Kelly: Ch 5; MacKenzie: Ch 4
4	Feb 3	<i>Experimental Design</i> Readings: Kelly: Ch 6; Carpendale (2008); MacKenzie: Ch 5
	Feb 10	<i>Experimental Design (continued)</i>

Topic	Date	Topics
	Feb 17	<i>Mid-Semester Break</i>
5	Feb 24	<p><i>Ethics in Human Research</i></p> <p><i>Guest: Ara Steininger (University of Regina Research Ethics Board)</i></p> <p><a href="https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2018.html">https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2018.html</a></p> <p>Readings: Kelly: Ch 14</p>
6	Mar 3	<p><i>Participants, Tasks, &amp; Collections</i></p> <p>Readings: Kelly: Ch 7 – 8</p>
7	Mar 10	<p><i>Data Collection Methods</i></p> <p>Readings: Kelly: Ch 9</p>
8	Mar 17	<p><i>Measures</i></p> <p>Readings: Kelly: Ch 10</p>
9	Mar 24	<p><i>Data Analysis</i></p> <p>Readings: Kelly: Ch 11; MacKenzie: Ch 6</p>
	Mar 31	<i>Data Analysis (continued)</i>
10	Apr 7	<p><i>Validity &amp; Reliability</i></p> <p>Readings: Kelly: Ch 12; Carpendale (2008)</p>
	Apr 14	<i>Poster Session</i>

**Lectures and Lecture Notes**

Lectures will be held once per week: W 10:30 AM – 1:15 PM via Zoom. All lecture notes and assignments will be posted on UR Courses. The lecture notes should not be used as an alternative to attending the online lectures or doing the assigned readings. It is expected that students will attend the online lectures, listen to the explanations and discussions, and take notes about the important information, and participate in the assigned activities.

**Participation & Contribution**

Attendance will be taken during the first 10 minutes of each lecture. Students will be expected to actively contribute to the discussions and activities during the lectures, which will form the basis for the 5% participation and contribution mark. Socrative (socrative.com) will be used to support in-class interaction.

**Assessments**

Your performance in this course will be assessed using a variety of methods. Working in groups, you will be expected to design a controlled laboratory study, prepare a Research Ethics Board (REB) application, conduct a pilot test, perform preliminary data analysis on your pilot test data, and present your work in an online poster session. There will also be a final examination on Wednesday April 21 from 9:00 – 11:00 AM. Students are expected to participate in the pilot testing for other students.

**Taking your Final Exam with Proctortrack**

Proctortrack is a remote proctoring tool that is integrated into UR Courses and provides for student identity verification and the monitoring of students while taking examinations remotely. This remote proctoring option allows University of Regina students to continue with remote learning in the current environment. When using Proctortrack remote proctoring service, your personal information is being collected and will be used for the purposes of creating a student profile account, verifying your identity, and proctoring your exam.

When you sign into Proctortrack, you will be asked to provide your consent, agreement and acknowledgment to allow Proctortrack to collect, create, process and store personal information. This personal information may include: U of R student card, live image captured via a webcam, first and last name, institution name, student number, and real-time audio, video and on-screen activity to prevent unauthorized viewing of content during an exam.

The personal information collected by Proctortrack will be used by the University of Regina for the purposes of identity verification and exam proctoring. Any video records of you created by Proctortrack will be kept by Proctortrack and shared as necessary with the University of Regina for assessment of possible academic integrity infractions. Non-relevant recordings are destroyed after 180 days. All personal information collected and stored by Proctortrack within your student profile account will be permanently deleted if the account has not been used after one year.

For more information, please reference the remote proctoring FAQ document at <https://www.uregina.ca/remote-learning/index.html#proctoring>.

### **Grades**

All grades will be assigned according to the Undergraduate Calendar – Academic Regulations – Grading System and Descriptions:

90–100: An outstanding performance.

80–89: Very good performance.

70–79: Above average performance.

60–69: A generally satisfactory and intellectually adequate performance.

50–59: A barely acceptable performance.

0–49: An unacceptable performance.

Any issues or problems with the assigned grades must be identified and sent to the course instructor within one week of receiving the marked feedback. This must be done via email ([orland.hoeber@uregina.ca](mailto:orland.hoeber@uregina.ca)) and must include a clear explanation of where it is believed a mistake has been made. Simply asking for additional grades is not sufficient ground for a re-assessment.

### Other Notes and Information

1. The best way to contact me is via email.
2. You should **send class-related email using your University of Regina account only**. This will ensure that spam filtering does not keep your email from getting to me.
3. You should check UR Courses and your University email on a regular basis. Important announcements for this class will be made on UR Courses. Other announcements and direct communication will be via email.
4. **Students are expected to attend all online lectures**. If you must skip a lecture, it is your responsibility to find out from classmates what you missed. Note that skipping one lecture is the equivalent to skipping a week's lectures in this compressed format.
5. Although group discussions and study groups are encouraged, **coursework is to be completed among the assigned groups only**. Any discussions between members of different groups should be focused on general concepts, ideas, and lecture materials, and not the specific solutions of any coursework. **Copying of coursework is plagiarism. Allowing your coursework to be copied will be treated the same as copying**. THE CONSEQUENCE OF PLAGIARISM OR ANY OTHER FORM OF CHEATING MAY RANGE FROM A ZERO GRADE, TO FAILURE IN THE CLASS, TO EXPULSION FROM THE UNIVERSITY. Please note that the Associate Dean of the Faculty of Science will be informed of any such incident, as per university regulations. Refer to the section on Academic Misconduct and Penalties in the General University Calendar.
6. The exam is "closed book", with no additional material permitted. Cell phones and all other electronic devices must be turned off unless instructed otherwise (e.g., to scan an answer to a question). Students are expected to work alone on the exam, and not offer or ask for help from anyone.
7. **If you have any issues with the marking of any assignment or exam in this course, please submit your complaint via email directly to the instructor** (not to the marker or TA). Explain which course component you want investigated, your current mark, and the perceived problem with the marking. **All issues with marking must be raised one week after the grade is assigned**.
8. The Undergraduate Calendar is available here:  
<https://www.uregina.ca/student/registrar/resources-for-students/academic-calendars-and-schedule/undergraduate-calendar/sections.html>