Usability Engineering (UE) is a structured approach to developing usable user interface designs. UE helps integrate human-computer interaction (HCI) requirements and design approaches within development projects managed by software engineering (SE) methodologies. This course presents a requirements engineering (RE) approach to usability engineering.

Requirements Engineering (a sub discipline of Software Engineering) focuses on applying development processes and documenting information items that support these development processes in order to engineer large scale software projects and to provide information that readily supports further evolutionary development of these projects. While RE is most needed for large scale projects, its processes and information items can also be scaled down to smaller developments. This approach is being taken because it can be applied to all types and sizes of developments.

This class focuses on the needs of users and their tasks, which are at the heart of all systems development. It demonstrates how RE can be applied to engineering usable systems. While it does not deal with technical issues (such as program or database design and construction) it provides clear linkages to those SE activities, which also fit into the same overall life cycle.

In addition to providing students with an advanced understanding of UE and RE, this class introduces them to a variety of significant international standards in the fields of Software Engineering and of Ergonomics.

Please contact Prof. Jim Carter <carter@cs.usask.ca> if you are interested in further information about this class.
Course Syllabus CMPT 479 / 817

Catalog Description

Usability Engineering (UE) is a structured approach to developing usable user interface designs. UE helps integrate human-computer interaction (HCI) requirements and design approaches within development projects managed by software engineering (SE) methodologies. This course presents a requirements engineering (RE) approach to usability engineering by providing in depth coverage of Putting Usability First.

Prerequisites

- CMPT 479 prerequisite: CMPT 370 or permission of instructor.
- CMPT 817 prerequisite: graduate student standing

Class Time & Location: Tues & Thurs 1:00 - 2:20 in Spinks 371.

Website: http://userlab.usask.ca/CMPT 479/c479home.html

Instructor: Jim Carter <carter@cs.usask.ca> 280.3 Thorvaldson Bldg, 966-4893.

Office hours: Mon/Weds/Fri 12:30 - 1:20 or by appointment.

Course Objectives

A student successfully completing this course shall be able:

1. To identify opportunities for improving the usability and accessibility of existing and proposed systems
2. To apply the components of the definitions of usability and accessibility to evaluating and developing interactive systems
3. To apply usability methods in evaluating and developing interactive systems
4. To apply principles and other forms of ergonomic and user interface guidance
to evaluating and developing interactive systems
5. To identify and analyze the various components of the overall context of use of an interactive system
6. To develop usability and accessibility specifications that can be used in evaluating and developing interactive systems
7. To identify techniques and technologies that can satisfy usability and accessibility specifications

Student Evaluation:

<table>
<thead>
<tr>
<th>CMPT 479</th>
<th>CMPT 817</th>
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</thead>
<tbody>
<tr>
<td>20% Assignment 1 Oct 8</td>
<td>20% Assignment 1</td>
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<tr>
<td>20% Assignment 2 Oct 22</td>
<td>20% Assignment 2</td>
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<tr>
<td>30% Term Project</td>
<td>50% Term Project</td>
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<tr>
<td>30% Final Exam</td>
<td>10% Class Participation</td>
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NOTE: It is important to complete assignments and the term project on time. Students having difficulties in meeting the due dates are encouraged to discuss these difficulties with Prof. Carter as soon as possible.

Attendance Expectations

It is expected that students will attend and participate in all class sessions. Students who are unable to attend a particular class are requested to advise the instructor by e-mail at least 30 minutes prior to the class.

Final Exam Scheduling

The Registrar schedules all final examinations, including deferred and supplemental examinations. Students are advised not to make travel arrangements for the exam period until the exam schedule has been posted.

Note: All students must be properly registered in order to attend lectures and receive credit for this course.

Text / Recommended Reading:

The main text is a manuscript of the book: Usability Centered Development by Dr. Jim Carter.

Free access to all chapters of the text will be provided to students registered in the
class via the Moodle system.

# Lecture Schedule

[ALL DATES AND TOPICS SUBJECT TO CHANGE]

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics</th>
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<tbody>
<tr>
<td>Sept 5</td>
<td>Course Introduction</td>
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<tr>
<td>Sept 10</td>
<td>1. Introduction to Usability-Centered Development</td>
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<tr>
<td>Sept 12</td>
<td>2. Usability, Accessibility and related concepts</td>
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<tr>
<td>Sept 17</td>
<td>(ch 2 continued)</td>
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<tr>
<td>Sept 19</td>
<td>3. Usability Methods</td>
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<tr>
<td>Sept 24</td>
<td>4. Principles and Other Sources of Guidance</td>
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<tr>
<td>Sept 26</td>
<td>Discuss Assignment 1 - Applying Principles which is Due 12:00 noon, Tuesday Oct 8</td>
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<td>5. Possibilities and Scenarios</td>
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<td>Oct 1</td>
<td>6. Identifying Tasks</td>
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<td>Oct 3</td>
<td>7. Identifying Users</td>
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<tr>
<td>Oct 8</td>
<td>8. Identifying Content</td>
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<td></td>
<td>* Assignment 1 - Applying Principles Due 12:00 noon, Tuesday Oct 8</td>
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<tr>
<td>Oct 10</td>
<td>* Discuss Assignment 2- User Testing which is Due 12:00 noon Tuesday Oct 22</td>
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<td>9. Identifying Environments</td>
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<tr>
<td>Oct 15</td>
<td>10. Needs Assessment</td>
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<tr>
<td>Oct 17</td>
<td>* Discuss Term Project - Proposal Due noon Thursday Oct 31</td>
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<td></td>
<td>11. Basic Task Characteristics</td>
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<tr>
<td>Oct 22</td>
<td>12. Additional Task Characteristics</td>
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<td>* Assignment 2 Due 12:00 noon Tuesday Oct 22</td>
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<tr>
<td>Oct 24</td>
<td>13. User Interaction Capabilities</td>
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<tr>
<td>Oct 29</td>
<td>14. User Cognitive and Affective Capabilities</td>
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<tr>
<td>Oct 31</td>
<td>15. Group Characteristics</td>
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<td></td>
<td>* Project proposal due 12:00 noon Thursday Oct 31</td>
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</table>

http://userlab.usask.ca/CMPT 479/c479home.html
| Nov 5 | Nov 7 | 16. Content Issues  
17. Specifying Needs, Requirements, and Recommendations |
19. Principles for the Presentation of Information |
| Nov 19 | Nov 21 | 20. Interface Design  
21. Implementation Issues |
| Nov 26 | Nov 28 | 22. Usability Engineering  
Student Project Presentations |
| Dec 3 | | No class today |

**Incomplete Course Work and Final Grades**

"When a student has not completed the required course work, which includes any assignment or examination including the final examination, by the time of submission of the final grades, they may be granted an extension to permit completion of an assignment, or granted a deferred examination in the case of absence from a final examination. Extensions for the completion of assignments must be approved by the Department Head, or Dean in non-departmentalized Colleges, and may exceed thirty days only in unusual circumstances. The student must apply to the instructor for such an extension and furnish satisfactory reasons for the deficiency. Deferred final examinations are granted as per College policy.

*In the interim, the instructor will submit a computed percentile grade for the course which factors in the incomplete course work as a zero, along with a grade comment of INF (Incomplete Failure) if a failing grade.*

If an extension is granted and the required assignment is submitted within the allotted time, or if a deferred examination is granted and written in the case of absence from the final examination, the instructor will submit a revised computed final percentage grade. The grade change will replace the previous grade and any grade comment of INF (Incomplete Failure) will be removed.

For provisions governing examinations and grading, students are referred to the [course homepage](http://userlab.usask.ca/CMPT 479/c479home.html).
University Council Regulations on Examinations section of the Calendar.

(2011 University of Saskatchewan Calendar/Academic Courses Policy)

**Academic Honesty**

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.


For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: [http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf](http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf)

**Examinations with Disability Services for Students (DSS)**

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check [http://www.students.usask.ca/disability/](http://www.students.usask.ca/disability/), or contact DSS at 966-7273 or dss@usask.ca.

Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who
are being accommodated by the deadlines established by DSS.

Date of last revision: Aug 22, 2013