

**SYDE 740 – ADVANCED INTERFACE DESIGN (WINTER 2021)**  
**Department of Systems Design Engineering**  
**University of Waterloo**

**COURSE SYLLABUS**

**INSTRUCTIONAL TEAM & MEETING TIMES**

**Instructors:** Dr. Siby Samuel

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**Lectures:** Tuesdays 3:30 pm – 4:20 pm  
Thursdays 1:00 pm - 1:50 pm, 2:00 pm – 2:50 pm

**Tutorials:** Fridays 11:30 am – 12:20 pm or 12:30 pm to 1:30 pm

**Office Hours** (with Prof. Samuel): Wednesday 3 – 4 pm (Online) [Additional meeting times may be scheduled via email]

**COURSE DESCRIPTION**

The intent of this course is to give you hands-on experience with some of the current popular techniques, design and research issues in user interface design. As a result, the course teaches concepts, with examples wherever possible, but the evaluation is focused on the students producing a design portfolio that demonstrates multiple phases of an interface design cycle from requirements gathering, storyboard prototyping, less formal review methods, look and feel prototypes, and finally usability testing. Broadly, the scope of the course includes :- a) identifying the design space, challenges and trends in the interface design space, b) understanding the users of such interfaces and the moderating factors that can impact safety, usability and efficiency, c) exposure to analytical techniques, experimental design and testing methods, d) review of data analysis and, e) reflection on lessons learned. While not explicitly a course in usability testing or human-computer interaction, the course provides some review of these ideas but assumes that the students have experience from prior courses or work experience to use these ideas with minimal review. The emphasis is on learning a systematic design process, advanced knowledge elicitation techniques, and objective evaluation techniques and demonstrating competency in these areas.

**INTENDED LEARNING OBJECTIVES**

- a) The student will create a design portfolio that demonstrates their skills, abilities, and learning throughout the course.
- b) The student will demonstrate competency in Interface Design methods such as Wireframing, Storyboarding, Prototyping, User Requirements Elicitation Techniques, User Modeling Techniques (Personas, Task Analysis), User Testing

- c) The student will have the opportunity to use Interface Design tools such as Balsamiq or Axure, Usabilla, Design pattern sites, Moodboard creators, Crowd sourced user testing sites.

**\*Changes may be made to the schedule with appropriate prior notice.**

### TENTATIVE LECTURE SCHEDULE

Week	Topic
<b>Week 1</b>	<b>Lecture 1 - Tuesday, Jan 12<sup>th</sup></b>
	Introduction
	Overview of Syllabus/Graded Components/Grading Rubric
	<b>Lecture 2 – Thursday, Jan 14<sup>th</sup></b>
	User requirements review Part 1 (interviews, observations, task analysis, personas, use cases)
	Developing a Design Portfolio
<b>Week 2</b>	<b>Lecture 3 - Tuesday, Jan 19<sup>th</sup></b>
	User requirements review Part 2
	<b>Lecture 4 - Thursday, Jan 21<sup>st</sup></b>
	Visual aspects of Layout
<b>Week 3</b>	<b>Lecture 5 – Tuesday, Jan 26<sup>th</sup></b>
	Navigation and information structure
	<b>Thursday, Jan 28<sup>th</sup></b>
	3-minute Design Idea Pitch <b>[7 points]</b>
<b>Week 4</b>	<b>Tuesday, Feb 2<sup>nd</sup></b>
	3-minute Design Idea Pitch <b>[7 points]</b>
	<b>Thursday, Feb 4<sup>th</sup></b>
	Wire framing
<b>Week 5</b>	<b>Lecture 6 - Tuesday, Feb 9<sup>th</sup></b>
	Mood boards & Storyboarding
	<b>Lecture 7 – Thursday, Feb 11<sup>th</sup></b>
	Fonts & Typography
<b>Week 6</b>	<b>Reading Week [Tuesday, Feb 16]</b>
	<b>Reading Week [Thursday, Feb 18]</b>
<b>Week 7</b>	<b>Lecture 8 – Tuesday, Feb 23<sup>rd</sup></b>
	Color
	<b>Lecture 9 – Thursday, Feb 25<sup>th</sup></b>
	Icon Design
<b>Week 8</b>	<b>Lecture 10 - Tuesday, Mar 2<sup>nd</sup></b>
	Design Patterns
	<b>Lecture 11 - Thursday, Mar 4<sup>th</sup></b>
	Motion
<b>Week 9</b>	<b>Lecture 12 - Tuesday, Mar 9<sup>th</sup></b>

	User Testing
	<b>Lecture 13 - Thursday, Mar 11<sup>th</sup></b>
	User Testing cont'd
<b>Week 10</b>	<b>Scheduled Pause by University (NO CLASS) Tuesday, Mar 16<sup>th</sup></b>
	<b>Lecture 14 - Thursday, Mar 18<sup>th</sup></b>
	Design for Engagement and Persuasion
<b>Week 11</b>	<b>Lecture 15 - Tuesday, Mar 23<sup>rd</sup></b>
	Design for Wearables
	<b>Lecture 16 - Thursday, Mar 25<sup>th</sup></b>
	Business Metrics & Conversion Funnels
<b>Week 12</b>	<b>Tuesday, Mar 30<sup>th</sup></b>
	Design Test [ <b>15 points</b> ]
	<b>Thursday, Apr 1<sup>th</sup></b>
	<i>Portfolio Presentations</i>
<b>Week 13</b>	<b>Tuesday, Apr 6<sup>th</sup></b>
	<i>Portfolio Presentations</i>
	<b>Thursday, Apr 8<sup>th</sup></b>
	<i>Portfolio Presentations</i>
<b>Week 14</b>	<b>Tuesday, Apr 13<sup>th</sup></b>
	<i>Portfolio Presentations</i>

### TENTATIVE TUTORIAL SCHEDULE (Optional)

<b>Week 1 – Jan 15</b>	Scoping and planning portfolio – Opportunity Assessment
<b>Week 2 – Jan 22</b>	Scoping and planning portfolio – Opportunity Refinement
<b>Week 3 – Jan 29</b>	<b>No Tutorial</b> – Design Pitch
<b>Week 4 – Feb 5</b>	Structuring information Exercise
<b>Week 5 – Feb 12</b>	Wireframing Exercises
<b>Week 6 – Feb 19 (Reading week break)</b>	<b>No Tutorial</b>
<b>Week 7 – Feb 26</b>	Mood boarding and Storyboarding Exercises
<b>Week 8 – Mar 5</b>	Fonts, Typography, Color Exercises
<b>Week 9 – Mar 12</b>	Icon Design Exercises
<b>Week 10 – Mar 19</b>	Motion, Design patterns Exercises
<b>Week 11 – Mar 26</b>	User testing Exercises

## GRADING BREAKDOWN

Assignments	40%
Design Pitch	7%
Portfolio	28%
Design Test	25%
Total	100%

### - ASSIGNMENTS (40%)

There are 2 design assignments throughout the term.

### - DESIGN PITCH (7%)

All students will participate in a 3-minute Design Pitch. You need to pitch your design idea, design goals and anticipated design steps in no more than 3 minutes. Design Pitches are scheduled for **Jan 28<sup>th</sup>, Thursday**.

1 point will be deducted for pitches that exceed the time limit. 1 point each will be deducted for not specifying the idea, goals or anticipated steps.

### - DESIGN PORTFOLIO (28%)

All students will present their design portfolio to the class in the form of a 5 minute presentation during the last two weeks of classes (Detailed assessment rubric will be provided and discussed).

### - DESIGN TEST (25%)

A Design Test will be asynchronously conducted on **Tuesday, March 30<sup>th</sup>**. Questions will be available on Monday, March 29<sup>th</sup>, 11 pm and test will be due on March 31<sup>st</sup> by 11 pm.

## DELIVERABLES DEADLINES

Deliverable Type	Date Available	Date Due
Design Pitch	Will be posted Jan 13 <sup>th</sup>	Jan 28 <sup>th</sup>
Assignment 1	Friday, Jan 22 <sup>nd</sup>	Friday, Feb 12 <sup>th</sup>
Assignment 2	Monday, Feb 22 <sup>nd</sup>	Friday, Mar 12 <sup>th</sup>
Design Test	Monday, Mar 29 <sup>th</sup> (11 pm)	Wednesday, Mar 31 <sup>st</sup> (end of day)

Portfolio	-	On the day of presentation (latest by April 14 <sup>th</sup> )
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### **ESTIMATED WEEKLY COURSE COMMITMENT (7-10 hours as per Faculty of Engineering expectations)**

- ~ 3 hours lectures/tutorial sessions.
- ~ 2 hours course preparation (readings, tasks) – may vary depending on student’s background & experience.
- ~ 5 hours design deliverables including assignments and portfolio – may vary depending on the topic chosen by the student for his/her portfolio. Note that your work must reflect uniqueness and personal learning.

### **COURSE AND DEPARTMENTAL EXPECTATIONS**

#### **Guiding Principles for our SYDE-BME Community (faculty, staff, and students):**

1) Be compassionate. 2) Be accountable. 3) Be patient. 4) Be safe and healthy.

**Compassionate and respectful communication:** Most online communication between the Department and students will be done through LEARN and/or email. Students are reminded that they should now use their email account [name@uwaterloo.ca](mailto:name@uwaterloo.ca). Include an academic signature with your full name, program, student ID. We encourage you to include your preferred pronouns (he/him; she/her; they/them).

**Scheduling of Synchronous (live) online course events:** Due to the COVID-19 pandemic, all University of Waterloo courses components will be delivered online, until further notice. To maintain build supportive teaching environments, instructors may use the time slots (EDT) scheduled “in-class” hours to hold “live-stream” events such as lectures, tutorial help sessions, group activities, and open office hours. To accommodate different time zones, different working/studying conditions and limitations in internet access, all critical course components, including lectures and student support must be made available in asynchronous formats. Any timed component (for example: a test or quiz) must take time zone and internet availability into account.

**Course Assignments & Deliverables (Posting, Submissions, and Feedback):** Instructions for course assignments and deliverables will be posted in UW-Learn (SYDE 542). Students will upload relevant documents to appropriate electronic drop boxes. As appropriate, feedback to individuals and teams will be provided electronically. Late submissions will receive a grade of 0; however, feedback will still be provided to help with student learning.

**Attendance and Participation Submissions:** Students may earn up to a maximum of 10% for Participation Activities.

**Deadlines and Late Penalties:** Course deliverables submitted after the due date will be assigned

a grade of zero (0). *This penalty may be waived at the discretion of the instructor in the event of verifiable exceptional circumstances in keeping with UW policies.*

**Fair Contingencies for Emergency Remote Teaching** We are facing unusual and challenging times. To provide contingency for unforeseen circumstances, the instructor reserves the right to modify course topics and/or assessments and/or weight and/or deadlines with due notice to students. In the event of further challenges, the instructor will work with the Department/Faculty to find reasonable and fair solutions that respect rights and workloads of students, staff, and faculty.

**SYDE-BME COMMENT ON ACCOMMODATION:** We respect that our SYDE-BME students are independent adult decision-makers, with many opportunities to partake in activities that might be in time conflict with academic deadlines and deliverables. Along with the right to make adult decisions comes the responsibility and accountability for those decisions and any outcomes.

The University of Waterloo's policy on accommodation for missed deliverables pertains to verifiable health matters, and highly unfortunate events (for example: family tragedies). The Department of Systems Design Engineering follows University of Waterloo's general policy: students who self-elect to forgo a deliverable receive a "0" for that deliverable. It is preferred practice so that fairness is maintained for members of the same class/course by avoiding preferential treatment, and so that instructors are not burdened with having to create extra quizzes, deliverables, etc. It also reflects professional practice, as failing to show up to work and missing deadlines can be very costly to the company and individual (for example: not submitting a contract proposal, or design review on time). **Please read the policy here:** [[Link Accommodation due to illness](#)]

**SYDE-BME Academic Priorities over Co-op Interviews:** With asynchronous schedules, students should be able to arrange co-op interviews that do not conflict with major deliverables (for example: timed course midterms, final exams). For deliverables with longer time windows (for example: 24-48 hours or more), students must manage their time for deliverables and co-op interviews accordingly. If a co-op interview conflicts with a short deliverable time window (for example: 1-3 hours), then students MUST follow the CECA procedure for rescheduling the interview: [[Link CECA rescheduling co-op interviews](#)]

**Compassionate Accommodation:** If you are facing challenges that are affecting more than one course contact the Associate Chair Undergraduate (A.C.U.G. email: [sydeunde@uwaterloo.ca](mailto:sydeunde@uwaterloo.ca)) or the Director of BME (email: [sdbmedir@uwaterloo.ca](mailto:sdbmedir@uwaterloo.ca)). They will review your case and coordinate a reasonable and fair plan in consultation with appropriate others (for example: instructors, Department Undergraduate Studies Committee, Chair, AccessAbility Services, Engineering Counselling services, Registrar's Office).

**Note:** We are facing unusual and challenging times. The instructor reserves the right to modify course topics and/or assessments with due notice. In the event of further challenges, the instructor will work with the Department to find reasonable and fair solutions.

#### **ACCESSABILITY:**

##### **Writing and Communication Centre.**

The Writing and Communication Centre works with students in all Faculties to help you

consider your audience, clarify your ideas, develop your voice, and write in the style appropriate to your discipline. We offer one-on-one support for writing papers, delivering presentations, integrating research, and revising for clarity and coherence. Group appointments for team-based projects, presentations, and papers are also available.

**All of our services are available virtually:** booked appointments, drop-ins, resources, and writing groups. Check out our website for other ways to interact with us, such as open online forums and online “Question and Answers”. Visit us at [www.uwaterloo.ca/wcc](http://www.uwaterloo.ca/wcc).

**Please note** that communication specialists guide you to see your work as readers would. We can teach you revising skills and strategies, but will not change or correct your work for you. Please bring your assignment instructions and any notes or drafts to your appointment.

[Link [Writing and Communication Centre](#)]

**AccessAbility Services:** AccessAbility Services (A.A.S.) is the University's centralized office for the provision of academic accommodations for students with a known or unknown disability, illness, or condition. Even if students are unsure of whether they qualify for A.A.S. support, an A.A.S. consultant can talk them through next steps, and refer them elsewhere if appropriate. [Link [AccessAbility Services](#)].

#### FACULTY OF ENGINEERING – MORE FINE PRINT

Faculty of Engineering website: [Link [Academic Support and Policies](#)].

**Academic Integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility.

[Check Academic Integrity website for more information. Link [Office of Academic Integrity](#)].

**Discipline:** A student is expected to know what constitutes academic integrity (see link above) to avoid committing an academic offence, and to take responsibility for their actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (for example: plagiarism, cheating) or about expectations for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. Relevant documents include:

- University of Waterloo Policy 71 [Link [Policy 71 Student Discipline](#)].
- Academic Penalty Guidelines [Link [Policy 71 Penalty Guidelines](#)].
- Assessment of Unauthorized Collaboration: [Link [Assessment of Unauthorized Collaboration](#)].

**Grievance:** A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4. When in doubt please be certain to contact the **Associate Chair Undergraduate or Academic Advisor** who will provide further assistance.

[Link [Policy 70 Petitions & Grievance](#).]

**Appeals:** A decision made, or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to Policy 72 (Student Appeals)  
[Link [Policy 72 Student Appeals](#)].