SFWRENG 4HC3 6HC3/COMPSCI 4HC3
Human Computer Interfaces

Fall 2021

Professor: Danny Papagiannis
E-mail: papagiad@mcmaster.ca
Office House: TBA, virtual hours available through Zoom

Lectures: Monday, Wednesday 11:30AM – 12:20PM, Online
Friday 1:30PM – 2:20PM, Online

Tutorials: T01 Friday 10:30 – 11:20
T02 Thursday 12:30pm – 1:20pm
T03 Thursday 10:30am – 11:20am
T04 Friday 2:30pm – 3:20pm

Course Description:
Design of user interfaces. Principles of good interface design. Task-oriented design. User experience design. Inclusive design. Communicating with graphics. Modes and mode awareness problem. Human cognition (memory, perception, motor systems). Help systems. Interface design tools. Three lectures, one tutorial (one hour); first term

Prerequisite(s): Registration in Level III or above of any Software Engineering program, or registration in an Integrated Biomedical Engineering and Health Sciences (IBEHS) program and either COMPENG 2SI4 or permission of the department Antirequisite(s): COMPSCI 4HC3, SFWRENG 4D03
Cross-list(s): COMPSCI 4HC3

This course will cover material from range of disciplines, including cognitive science, psychology, art, design thinking, quantum physics, and engineering. Students are strongly encouraged to think out of the box, and question the very essence of design itself

Course Objectives:
By the end of this course students will be able to:

- Apply design heuristics, principles, tests and theories to design user interfaces
- Understand concepts pertaining to memory, perception, motor skills, and how they apply to Human Computer Interaction
- Plan and conduct user research
- Design user interfaces using wireframe, mockup and prototyping tools
- Understand and apply standards for universal accessibility

- Understand the impact of human - computer interaction in everyday situations
- Gain a theoretical and practical understanding of contemporary issues in Interactive Design
- Work together in teams to complete a multi-phase design project

Required Texts:
This course will draw extensively on readings from online sources. Many of these articles can be accessed using your Library Login. A full list of readings will be posted to Avenue. For additional sources, I suggest typing the lecture topics as keywords on Google Scholar

Suggested Texts:

Benyon, David. *Designing Interactive Systems, 3rd Edition*. Pearson Press, 2013

Dix et al. *Human - Computer Interaction, 3rd Edition.* Pearson Press, 2013

Norman, Don. *The Design of Everyday Things by Don Norman*. Basic Books; Revised edition, 2013 (eBook freely accessible via the library)

Preece et al. *Interaction Design, 5th Edition.* Wiley Press, 2019

Shneiderman et al. Designing *the User Interface: Strategies for Effective Human-Computer Interaction*, *5th edition.* Pearson Press, 2009

Online delivery and attendance

Lectures and tutorials will be conducted synchronously on Zoom. Students will receive an invite to Teams before the first class and links will also be posted on Avenue.

All lectures and tutorials will be recorded and made available to students. Live attendance is not required but is highly recommended. There will be no graded work during lectures

Avenue to Learn will be used to host all course work and for submission of assessments. Usage of the Avenue to Learn discussion forum for course questions is highly encouraged as it is searchable and allows all students to view questions and answers

Course Evaluation - Undergraduate

Labs 10 X 1% - 10%
Mid-Term Test - 20%
Final Exam - 25%
Group Project - 35%
Individual Self Reflection – 10%

Total 100%

Course Evaluation - Graduate

Labs 10 X 1% - 10%
Mid-Term Test - 15%
Final Exam - 20%
Group Project - 35%
Individual Report - 10%
Individual Self Reflection – 10%

Total 100%

Group Work – 35%

The course places a large emphasis on group-based work based on a multi-phase design project. Students are required to form a project team of 5-6 members. Please note that all group members are required to be registered in the same lab section. The group project is cumulative, consisting of multiple project deliverables. It is essential that each deliverable is submitted on time. A list of due dates and deliverables will be posted to Avenue

Labs – 10%

Lab attendance is mandatory, and students will be assessed individually. Lab tasks may include submissions that need to be completed by the end of the session or by the end of the day

Individual Report – 10% - Graduate Students

Graduate students are required to complete a scholarly report on a topic pertaining to Human Computer Interaction. Further details will be discussed in class

Individual Self Reflection – 10%

All students will be required to complete a self-reflection paper at the end the course. The assignment will entail answering a series of questions that are designed for students to self-assess their learning and progress throughout the course

Exams – Please see assessment under Course Evaluation

Exams will be administered online and consist of Multiple Choice, True or False, Short Answer, and Long Answer questions. The Final Exam will be cumulative in nature, and assess all of the material in the course

Submission of Work

All work will be submitted using the dropbox folders on Avenue to Learn (found in the course shell menu under Assessments -> Assignments).

Late Submission Policy

Late assignments and project milestones will normally receive a late penalty of 10% per day late, up to 3 days late. **Assignments submitted after 3 days will result in a mark of 0. Exceptions will be made on a case by case basis, and may require documentation**

Course Adaptation:
The instructor and university reserve the right to modify elements of the course during the term.

The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes.

It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

COURSE OUTLINE – APPROVED ADVISORY STATEMENTS

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the *Academic Integrity Policy*, located at https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the *Code of Student Rights & Responsibilities* (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's *Academic Accommodation of Students with Disabilities* policy.

REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work".

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office ***normally within 10 working days*** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

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2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

Academic Accommodation of Students with Disabilities:
Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140, ext. 2865 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities.

Discrimination
The Faculty of Engineering is concerned with ensuring an environment that is free of all adverse discrimination. If there is a problem that cannot be resolved by discussion among the persons concerned, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Office or the Human Rights Consultant, as soon as possible.

Use of Avenue
In this course we will be using ``Avenue to Learn''. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this

course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.