



SFE 4010: Human Computer Interaction

(COURSE OUTLINE)

LECTURER- Martin Luther Bwangah

DAY/TIME: Monday/Wednesday 3:30PM- 05:10PM

VENUE: LAB 1

OFFICE HOURS DAY/TIME: Monday/Wednesday 3:30PM- 05:10PM

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Course Description:

This course is designed around the overall development cycle for an interactive software product. It starts with the introduction to what is Human Computer Interaction, Good and Poor Design Examples, What and Who are involved in HCI design, General Principles of HCI Design and the Norman's Principles of Usability. The unit then moves into the application of this knowledge by iteratively forming the HCI requirements and modeling the interaction process, designing the interface, implementing the resulting design, and finally evaluating the implemented product.

Link to university mission outcomes and school of science & technology

a) Link to University Mission Outcomes

1. High Order Thinking (U1)
2. Literacy (U2)
3. Preparedness for Career (U3)

b) Link to School of Science & Technology Mission Outcomes

1. The course contributes to school of science & technology mission outcomes in:
2. Developing competence in critical thinking, creative skills, use of technology, creativity and good communication skills. (O-1)
3. Demonstrating preparedness for career and lifelong learning in their chosen disciplines as well as understanding of the interdisciplinary nature of knowledge. (O-3)
4. Demonstrating the use of qualitative and quantitative research skills in Biomedical, communication and Information Technology(O-4)
5. Applying theories, concepts, and principles found in biological and physical sciences, including a thorough grounding in communication skills in multicultural & global perspectives (O-5)
6. Demonstrating a thorough understanding of effective, efficient professional and ethical leadership (O-6)

c) Program Learning Outcomes (PLOs)

By the end of this course, students will:

1. Understand interdisciplinary theoretical foundations of the field of Human-Computer Interaction;
2. Understanding design process involved in interaction design, navigation design, and screen design
3. How cognition and perception, which encompass attention, memory, thought, the “senses” play a role in affecting the experience of interactive design
4. How human physiology and emotion affects user experience
5. Understanding the implementation of windowing systems, applications, architectures, and frameworks
6. How to evaluate user experience

d) Course Learning Outcomes (CLOs)

By the end of the course the students will:

1. Be able to understand the interdisciplinary theoretical foundations of the field of Human-Computer Interaction.

2. Be able to implement and deploy a good Human-Computer Interaction system
3. Be able to illustrate practical approaches to translating the theory into building and evaluating interactive systems;
4. Be able to understand the tasks of researching, critically analyzing and reporting on an HCI topics.
5. Be able to implement and provide hands-on experience in designing or modifying and experimentally evaluating an interactive system.

e) Course Content

Week	Topic(s)	Learning outcomes	Activities/ Reading/ Assignments	Aids/ Reference/ Course Text/ Blackboard
1	Introduction History of HCI	Understand: I. What HCI II. Why It Is Important III. Principles of HCI	Readings: Chapter 1 course text	Chapter 1 course text
2	Specific guidelines	Explain Guideline; I. Categories human–computer interaction (HCI)	Come up with design guideline document Read: Norman principal of user ability Quiz 1	Chapter 2 course text
3	Human factors human–computer interaction (HCI) as theories/HCI paradigms and state of the art	Understand: I. Human Information Processing II. HCI principle of task/interaction modeling III. Sensation and Perception of Information IV. Human Body Ergonomics (Motor Capabilities)	Assignment 1	Chapter 3 course text
4	Human factors human–computer interaction (HCI) design	Understand; I. The Overall Design Process II. Interface Selection Options III. Wire-Framing	Handing in Assignment 1 hand in	Chapter 4 course text
5	HCI in software process	Understanding I. The software life cycle II. Activities in the life cycle	Quiz 2	Chapter 6 course text
6	<ul style="list-style-type: none"> User interface layer Interactive system development framework 	Understand; I. UI Layer II. UI Layer Execution III. UILayer Framework IV. Model, View, and Controller (MVC) V. MVC Implementation	Assignment 2	Chapter 5 course text
7	Mid Semester Exam	Mid Semester Exam		Mid Semester Exam
8	User interface evaluation	Understanding I. Evaluation Criteria II. Evaluation Methods	Assignment 3	Chapter 8 course text
9	Future of HCI	Understanding I. Non-WIMP/Natural/Multimodal Interfaces II. Mobile and Handheld Interaction III. High-End Cloud Service and Multimodal Client Interaction IV. Natural/Immersive/Experiential Interaction V. Mixed and Augmented Reality	Handing in Assignment 2	Chapter 8 course text
10	Cognitive models	Understand;	Quiz 4	Chapter 12 course text

		I. GOMS (goals, operators, methods and selection) mode II. Linguistic models III. Physical and device models		
11	Interaction design basics	Understand; I. What is design? II. To err is human III. The golden rule of design IV. The process of design V. User focus	Quiz 5	Chapter 5 course text
12	socio-organizational issues and stakeholder requirements	Understand; I. Organizational issues II. capturing requirements	Test	Chapter 13 course text
13	Task analysis	Understand; I. Differences between task analysis and other techniques	Handing Test	Chapter 15 course text
14	End Semester Exam	End Semester Exam	End Semester Exam	End Semester Exam

f) Mode of Delivery

Lectures and delivery through the USIU Zoom and Blackboard e-learning platform. Presentations by members of the class, Case discussions, Tutorials, group work,, Library, appropriate software, manual/notes. Throughout the course, the skills will be developed through a combination of theoretical discussions, practical based work; online classroom based tutorial exercises and directed self-study.

g) Course Outline Changes:

The material specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class by the instructor.

h) Instructional Materials and/or Equipment

Course text White board, Presentation slides, Blackboard e-learning platform, Journals, CASE tool.

i) Course Assessment

j) Grading:

Assignments will consist of readings, programming and/or written exercises. All work is to be done independently (unless explicitly stated by instructor). Late homework solutions will not be accepted. I reserve the right to keep all homework assignments.

Percentage	Letter Grade		
94% ≤ 97%	A	Assignments	20%
87% ≤ 89%	A-	Quizzes	15%
84% ≤ 87%	B+	Attendance/weekly Reviews	5%
84% ≤ 87%	B	Test	15%
78% ≤ 79%	B-	Final Exam	25%
74% ≤ 77%	C+	Mid Term Exam	20%
70% ≤ 73%	C	Total	100%
68% ≤ 69%	C-		
66% ≤ 67%	D+		
63% ≤ 65%	D		
60% ≤ 62%	D-		
F < 60%	F		

The final grade will be based on assignments (written and programming), quizzes, group work, attendance / participation, and exams. If you miss an exam or fail to turn in an assignment on time (without an official University excuse), you will receive a zero.

k) Instructional Materials

Course text, Handouts, White board, Presentation slides, Blackboard e-learning platform, Journals, CASE tool

1) TEXTBOOKS / RECOMMENDED READINGS

Course Text:

1. Human Computer Interaction, 3rd Edition Authors: Dix, Finlay, Abowd, Beale. Pearson Prentice Hall, 2004.
2. Human-Computer Interaction, Fundamentals and Practice Gerard Jounghyun Kim © 2015 by Taylor & Francis Group, LLC
CRC Press is an imprint of Taylor & Francis Group, an Informa business
3. Reference: Developing User Interfaces; Deborah Hix & H. Rex Hartson; John Wiley; 1993 and selected research papers.

m) Assignments:

1. The assignments are designed to be active learning experiences, supplementing class discussions and reading assignments
2. **No late assignments will be accepted!!**

n) Notes:

1. Will be available online in Blackboard.

o) University Attendance Policy: Please read and take note to avoid problems in the future:

1. An attendance roster is kept, and students are expected to attend all sessions on time and as scheduled. Prior permission **MUST** be obtained from the instructor if a class is to be missed for circumstances beyond the student's control. **Permission to miss a class does not constitute an excused absence. As per the university rules, any student who misses more than 7 classes excused or unexcused will automatically receive an F grade.**

There are no exceptions to this University policy. Attending University-sanctions events does not mean that it is an excused absence. It means that the instructor has to allow you the opportunity to make up or submit assignments after you return within a reasonable amount of time or to allow you to submit assignments or take examinations before the student travels for the events. If you registered late for this class, you will still be marked absent for the days you did not attend regardless of whether you were registered for the class or not.

p) Class policy

1. Students are expected to be respectful to the instructor and to each other. Words or actions that create a hostile environment will not be tolerated.
2. Students are not allowed to eat or drink in class.
3. Students are expected to come to class on time and to remain for the duration of the class period. Habitual tardiness, leaving early, and packing up belongings before the class has ended will not be tolerated.
4. The use of laptops, cellphones, tablets, or any other electronic device is not allowed during class other than for learning purposes.
5. Mobile phones should be switched OFF during a class session.

6. Computers should be turned OFF during theory sessions and used to complete LAB exercise only during practical sessions.
7. Students who come in 10minutes after class will not be allowed in the classroom
8. Attend classes and participate in class discussions. The instructor will introduce issues as starting points for in-class discussion in which everyone is expected to participate. This, of course, requires that you read the materials BEFORE they are discussed in class! Power point files of class lectures will be available on the blackboard. Class attendance and participation will be the sole determinant of whether you get the higher grade if you fall on the borderline.

q) Make Up Policy:

1. Students should consult the syllabus before making travel plans. Make ups will only be given in cases of a documented medical emergency and personal tragedy. **Late papers will only be accepted under the above conditions.** The Lecture should be informed in advance if a student will miss an examination or submit an assignment after the due date whenever possible.

r) Email Policy:

1. To the best of my ability, I will respond to emails every weekday during the normal work hours. If you have a time sensitive request, or you need a response from me, you should plan to email at least 24 hours in advance. Emails requesting information that has been covered in class or information on the syllabus will not be answered.

s) Academic integrity:

1. USIU defines academic integrity as the pursuit of scholarly activity in an open, honest, and responsible manner. All students should act with personal integrity, respect for other students' dignity, rights, and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. Dishonesty of any kind will not be tolerated in the course. Dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used, tampering with the academic work of other students. Students who are found to be dishonest will receive academic sanctions that

will be reported to the appropriate University offices for possible further disciplinary sanctions.

t) Required Readings:

1. Students are required to read the journal articles that are indicated on the syllabus. Students are to complete ALL readings before the subject is covered in class. Students can access and download the articles from the library's journal database.
2. Read the text & reference. The course will cover many chapters of the text and reference in lectures and reading assignments, at different levels of depth. With this graduate level course, you are expected NOT to depend solely on lectures, which will only touch upon selected points. Specific reading assignments from the text and reference will be given out in class.
3. You are expected to read all materials that are mentioned in the above table in the column Aids / References for the assigned week in advance so that you are well prepared for the lectures and tutorials. Otherwise you won't be able to participate actively in the lectures and can't complete the tutorial

u) Plagiarism and cheating:

Plagiarism and cheating are acts of misconducts as per university's academic codes and ethics. Any student who commits plagiarism or cheating in the university examinations will be subjected to sanctions up to and including **dismissal from the university.**

v) LockDown Browser Requirement

This course requires the use of LockDown Browser for online exams. Watch this video to get a basic understanding of LockDown Browser:

<https://www.respondus.com/products/lockdown-browser/student-movie.shtml>

Download Instructions

Download and install LockDown Browser from this link:

<https://download.respondus.com/lockdown/download.php?id=335121814>

Once Installed

Start LockDown Browser

Log into Blackboard Learn

Navigate to the test

Note: You won't be able to access tests with a standard web browser. If this is tried, an error message will indicate that the test requires the use of LockDown Browser. Simply start LockDown Browser and navigate back to the exam to continue.

Guidelines

When taking an online test, follow these guidelines:

Select a location where you won't be interrupted

Before starting the test, know how much time is available for it, and also that you've allotted sufficient time to complete it

Turn off all mobile devices, phones, etc. and don't have them within reach

Clear your area of all external materials - books, papers, other computers, or devices

Remain at your desk or workstation for the duration of the test

LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted

Getting Help

Several resources are available if you encounter problems with LockDown Browser:

The Windows and Mac versions of LockDown Browser have a "Help Center" button located on the toolbar. Use the "System & Network Check" to troubleshoot issues. If an exam requires you to use a webcam, also run the "Webcam Check" from this area

Respondus has a Knowledge Base available from support.respondus.com. Select the "Knowledge Base" link and then select "Respondus LockDown Browser" as the product.

If your problem is with a webcam, select "Respondus Monitor" as your product

If you're still unable to resolve a technical issue with LockDown Browser, go to support.respondus.com and select "Submit a Ticket". Provide detailed information about your problem and what steps you took to resolve it.