Computer Science 452
Interactive Systems Design
9:30 – 10:50 T/Th Stuart Hall 308

Instructor:	Dr. Stephen Hughes	Office Hours:
e-mail:	shughes@coe.edu	Mon/Wed/Fri 11:00 – 12:00
phone:	399-8231	Tues 2:00 – 3:00
		By Appointment or Open Door.
		315 Stuart Hall

COURSE DESCRIPTION

To be truly successful in Computer Science, practitioners must have a good understanding of not only the core technology, but also its users and how they interact with the technology. This course explores the design, implementation, and evaluation of interactive systems through study of both mainstream and emerging interface technologies. It also examines how human cognitive and ergonomic constraints drive the success or failure of technological solutions. Prerequisite: Object Oriented Programming (CS-245) or consent of instructor.

LEARNING OUTCOMES

Human computer interaction (HCI) is a discipline concerned with the design, evaluation and implementation of interactive computing systems. The goal of this course is to lay the foundations for the design of interactive systems by exploring several key aspects of HCI. Upon completion of this course, students will be able to:

- Create simple applications that include graphical user interfaces.
- Discuss why human-centered software development is important.
- Create and conduct a simple usability test for an existing software application.
- Use a variety of techniques to evaluate a given UI.
- Use prototyping techniques to gather, and report, user responses to an interface design.
- Apply an understanding of cognitive and physical capabilities and limitations to the design of a software application.
- Evaluate the affordances that emerging technologies provides its users.
- Understand the interaction possibilities beyond mouse-and-pointer interfaces.

CLASS ENVIRONMENT

This class will be taught in as an exploratory seminar. Conceptual material will be introduced through lectures, but a significant portion of class time will be devoted to working with the instructor and peers to co-develop and explore coding examples and other artifacts that can be shared with other members of the class. To thrive in this course, you must be willing to independently research, experiment, fail, recover, explore, tweak, discover and reflect.

This class is expected to consume at least 150 hours of student work over the course of the term. To meet this expectation, you will need to work outside of our scheduled meeting time.

You should plan to dedicate a *minimum* of 10 hours per week to this class.

STUDENT ASSESSMENT

16% (x4) **Unit activities**
The course material will span four major units:

- GUI building
- Human factors
- User-Centered Design tools and techniques
- Interactive input devices

Each unit will require student to complete 2-3 activities and submit a summative evaluation to assess the students' overall mastery of that unit's material

16% **Research Paper –** You will prepare a significant research paper on an emerging topic in Human Computer Interaction. This will require that you read and synthesize current journal articles into a coherent written presentation of your chosen topic.

20% **Final Project:** This is a culminating activity that allows you to experience first-hand the HCI concepts explored in the seminar. Your project will allow you to redesign a faulty interface, implement an emerging technology or conduct an empirical study of existing technologies. You will be responsible for presenting your final project during the final exam period (12/15: 8:00-10:00).

Letter grades will be assigned based on the following scale.

	$87 \leq$ B+ < 90	$77 \leq$ C+ < 80	$67 \leq$ D+ < 70	
$93 \leq$ A	$83 \leq$ B < 87	$73 \leq$ C < 77	$63 \leq$ D < 67	F < 60
$90 \leq$ A- < 93	$80 \leq$ B- < 83	$70 \leq$ C- < 73	$60 \leq$ D- < 63	

Your grades are considered confidential in accordance with FERPA (Family Educational Rights and Privacy Act of 1974) For additional details, please refer to http://www.coe.edu/academics/registrar/ferpa.

COURSE MATERIALS

Textbook:

Benyon, David. (2014). Designing Interactive Systems. Pearson ISBN:978-1-4479-2011-3

There will be additional electronic resources distributed via Moodle.

You will be responsible for conducting your own research for this course. Many papers in our field are copyrighted by either ACM or IEEE. If you are a member of either of these organizations, you can get access to all of their papers online. Student membership to ACM costs $42, Student IEEE memberships are $30. In general, it is a good idea to join one of these organizations – in addition to access to the digital libraries, you also get access to other professional resources (i.e. job announcements, etc).

COURSE POLICIES

Attendance Policy
Class attendance is vital to your success in this course; material covered during missed sessions is the responsibility of the student. Conversations held in class illuminate the published class materials and should not be missed. Graded in-class activities will not be available for make-up without prior approval or extreme circumstances.

Late Work
All assignments will be due at class time and are expected to be submitted on time. Late work will not receive full credit; work submitted beyond two weeks of the deadline will not be accepted.

Office Hours
Office hours are an opportunity for you to clarify details you may have missed in class, discuss general computer science issues, or to have a profound conversation about the health benefits of chinchilla milk. It is time that is reserved for you; I may appear busy, but you are not interrupting me – unless another student has arrived first. If you come to office hours with a problem on the assignment, you should come prepared to answer questions, as well as ask them. If you have questions regarding code, you also should come prepared with access to an electronic version of your work.

Academic Integrity
At Coe College, we expect academic integrity of all members of our community. Academic integrity assumes honesty about the nature of one's work in all situations. Such honesty is at the heart of the educational enterprise and is a pre-condition for intellectual growth. Academic dishonesty is the willful attempt to misrepresent one's work, cheat, plagiarize, or impede other students' academic progress. Academic dishonesty interferes with the mission of the College and will be treated with the utmost seriousness as a violation of community standards.

Please refer to the Coe College Academic Catalog for complete information regarding Academic Integrity: http://www.coe.edu/academics/dean/academicintegrity

I believe that you can learn a lot from your peers, both in the class and in the broader community. Therefore, I strongly encourage collaboration with both. However, do not mistake this as a license to cheat. It is one thing to *learn* from and with your peers, it is another to pass their work off as your own. With respect to writing code for this class:

- You are expected to document any collaboration that takes place.
- Absolutely no electronic transfer of code between students is permitted.
- Any code that you "find" on the Internet must be cited, with an active link to that code.
- While you are encouraged to engage in conversations in online forums, under no circumstances are you permitted to solicit other individuals to complete your work for you.

Ultimately, YOU are responsible for all aspects of your submissions. Failure to be able to explain and defend your submission will be treated as a violation of academic integrity.

Special Services
Any student with a disability, who suspects they may have a disability, or who has concerns related to the format or requirements of this course, should contact me privately to discuss reasonable options or adjustments. During our discussion, if we determine that formal, disability-related accommodations are necessary I will refer you to the Accessibility Services Coordinator located within the Academic Achievement Program in the Learning Commons, lower level Stewart Memorial Library

The Accessibility Services Coordinator (ASC) can meet with you. Together you will develop a plan for reasonable accommodations based on your individual needs and history that can be used in my class and others. The ASC will then notify me of these accommodations. You are welcome to talk to me at any point in the semester about such issues, but it is always best if we can talk at least one week prior to the need for any modifications.

End of Course

This course officially ends with the scheduled Final Exam session. No work for this class will be accepted beyond that point