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SIE 517: Spatial Interaction Design (SIxD)
Sample Syllabus

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Course Description
The main objective of this course is to provide a hands-on experience of interaction design research practice focusing on the interactive prototype construction. The principles and technologies of interaction design will be learned by adding expressive interactions to objects and spaces around us (spatial interactions). Interaction Design (IxD) discovers people's needs, understands the context of use, frames product opportunities, and propose useful, usable, and desirable (usually digital) products. Interaction designers often work with narrative to explore and refine desired behaviors and user experience. This interdisciplinary course (projects based) will engage students with the fundamentals of interaction design and applied interaction design methods to shape behavior between people and products, services, and environments. First, we will select a specific location in a domestic setting (for example, the kitchen, dining room, office space, or the playground), then discuss and develop digital interactions for novel experiences.

Credits: 3

Prerequisites
None

URL for Course: forthcoming

Faculty Information
Dr. Nimesha Ranasinghe
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Office Hours
Office hours for this course are announced at the beginning of each session. Alternatively, contact the instructor.

Instructional Materials:

1. Computers:
Each student is required to have access to a laptop, which will be used in class for hands-on exercises during class (any platform is ok, Windows, Mac OS or Linux but not Chrome book)

2. Textbooks:
Interaction Design: Beyond Human-Computer Interaction, 4th Edition
(http://www.id-book.com)
(Power-point slides, research papers, and other materials will be available in Blackboard)

3. Software and other material:
Free and open source software and hardware platforms will be used where necessary

Course Goals:

- Understand the importance of user-centred design and methods of user information gathering
- Understand and apply basic principles of interaction design (conduct user research, determine the information architecture of a digital product, design user flows and wireframes, create prototypes, conduct user testing, etc.)
- Understand how the sensory, cognitive and physical capabilities of users inform the design of interactive products (Problem solving, presentation skills, collaboration and team work, empathy, curiosity, flexibility, interview skills, etc.)
- Learn basic technical skills (where necessary) – Prototyping with Arduino, Processing, etc.

Student Learning Outcomes:
Upon successful completion of this course, students will be able to:

- Analyse and critique the design of interactive products (how to make any object digitally interactive)
- Select, adapt and apply suitable interaction design approaches and techniques towards the design of an interactive product
- Demonstrate the ability to provide usable solutions to complex problems with the skills developed in the course
- Publish their creative work!

Course Outline

1. Course Schedule
This course consists of regularly offered on-campus lectures and student-engaged project development sessions with on-campus and online live graduate students. These sessions are also recorded for viewing by distance students that are unable to attend live virtually. Evening hour virtual office hours are made available such that all distance students are able to attend at a minimum of one hour per week and on-campus students are as well invited to attend these sessions.

Week 1	1. Intro and Overview (present and discuss about the objectives of the class, class outline and project outline.) 2. What is "IxD"? 3. Introduction to sketching ideas.
Week 2	4. The Human, Computer, and Interaction 5. Interaction Design Practice (covering iterative design processes, the historical context of Interaction Design, idea hexagon etc.)
Week 3	6. Interfaces and sensing intelligence - how can an object become intelligent? This class will look at enhancing passive objects as intelligent devices (sensors). From the idea sketches, the class will take a hands on approach to making a sensing devices 7. Design thinking workshop (AEIOU framework) - Projects start
Week 4	8. Actuating for Expressivity and interactivity (Can a passive object express itself? This class will look at physically animating /

	actuating passive objects.) 9. Interactive workshops (Arduino, Sensors and actuators, Processing)
Week 5	10. Processing Interactivity (this class will look at implementing the interaction experience through making a completely interactive object. Apply the principles learned in class 2.)
Week 6	11. Cognitive aspects and Emotional interaction
Week 7	12. Prototyping (draft presentation and demo mid-fi prototype) - Each teams are expected to briefly present the details of their concept including the idea, implementation plan. In addition, discussions of the top HCI concepts and papers will be presented.
Week 8	13. Gathering user feedback and Data analysis
Week 9	14. User Experiments/feedback, Refinements to prototypes
Week 10	15. User Experiments/feedback, Refinements to prototypes
Week 11	16. Project updates and start writing draft reports / research papers
Week 12	17. Mini conference style demo day (Elevator pitch + Hi-Fi prototype demo) + Guest lecture
Week 13	18. What's next?

2. Grading and Course Expectations

As a graduate level course, you are expected to exhibit high quality work that demonstrates sound understanding of the concepts and their complexity. Earning an "A" represents oral and written work that is of exceptionally high quality and demonstrates superb understanding of the course material. A "B" grade represents oral and written work that is of good quality and demonstrates a sound understanding of course material. A "C" grade represents a minimally adequate completion of assignments and participation demonstrating a limited understanding of course material. This class has no exams; only homework and/or project assignments. Active live class participation (virtual or on-campus) is expected and may take the form of active participation in the live class sessions or regular participation in virtual office hours with the instructor with at least one time each week meeting the schedule needs of all students.

Grading criteria:
> 4 assignments (IRMD) – 40%
> Midterm evaluation (mid-fi projects) – 10%
> Reflections – 10%
> Final project demonstrations (hi-fi projects) – 30%
> Class participation – 10%

Policies:
> Students are expected to attend class sessions (in person or virtual) or office hours (virtual).
> Late assignments will result in 10% deduction in grade.

Standard Syllabus Notices
- Important Disability Notice
- Academic Honesty Notice
- Nondiscrimination Notice
- UMaine Student Code of Conduct
- Classroom Civility
- Sexual Discrimination Reporting
- Course Schedule Disclaimer
- Contingency Plans in the Event of an Epidemic