New York University Abu Dhabi

Interactive Media Program
Course title: Interactive Media in the World
Course number: IM-UH 1114J
Section: 1
Credit Hours: 4
Prerequisites: None

Course website: https://github.com/michaelshiloh/IMInTheWorld
Instructor: Michael Shiloh mshiloh@nyu.edu
Office hours: By appointment
Meeting times: ???
Session: J-term 2022

Subject to change due to health regulations, logistics, etc.

Course Description:

"Interactive Media in the World" explores the principles of Interactive Media put to use in the real world. Interactive Media is technology in the service of inventors, artists, designers, developers, educators, and other creatives, who use it to create experiences and devices that are insightful, critical, and thought provoking.
Participants will learn the principles of Interactive media (programming, electronics, and design) and how to prototype projects rapidly. We will visit galleries, museums, studios, workshops, classrooms, and labs. We will hear from artists, designers, inventors, teachers, and other practitioners.
Israel/Palestine has a thriving art, design, and technology scene and a large and diverse community of artists, educators, museums, designers, inventors, and entrepreneurs. This provides an opportunity to explore the contemporary world of Interactive Media where it is practiced and installed in the field. Visits will include Jewish, Arab, and Palestinian locations, and students who speak Arabic are especially encouraged to join.
Students will work both individually and in groups. Technical and critical readings and discussion will culminate in a production project that will respond to what we've learned.

Course Learning Outcomes (Linked Program Learning Outcomes)

- Gain experience collaborating with others in both creative and technical processes (PLOs 7,8)
- Think critically about interaction design principles for physical interfaces (PLOs 2, 4)
- Work with basic electronics, including analogue and digital sensors and actuators (PLOs 5)
- Understand and be able to implement basic principles of computer programming, including working with objects and classes (PLOs 5)
- Use a computer as a tool for self-expression (PLOs 6, 7)

- Bring information about the physical world (such as light, pressure, temperature) into the computer and process it in an interesting fashion (PLOs 5, 6)
- Research and develop an understanding of the practitioners and artifacts of Interactive Media (PLOs 1, 4, 7)

The Interactive Media Program Learning Outcomes (PLO) are described below:

Upon completion of the major in Interactive Media at NYU Abu Dhabi, all students are expected to have fulfilled the following:

1 Research and Understanding: IM students will cultivate a substantive understanding of the past, present, and future landscape of Interactive Media.
2 Analytical Thinking: IM students will be challenged to answer fundamental questions relating to the field of Interactive Media.
3 Conceptual Thinking: IM students will develop conceptual skills through the use of computational and interactive media tools to create project-based work and project oriented research.
4 Critical Thinking: IM students will refine their critical thinking skills by analyzing and critiquing work in cultural, social, historical, ethical, and aesthetic contexts.
5 Technical Implementation: IM students will cultivate technical skills with contemporary media technologies to execute their coursework.
6 Creative Processes: IM students will gain the ability to explore, innovate, and realize creative ideas in multiple fields of inquiry and interest.
7 Organization and Communication: IM students will develop professional practices of delivering and sharing their work.
8 Collaboration: IM Students will gain experience in collaboration through active participation in group and team-based work.

Teaching and Learning methodologies:

The philosophy of the Interactive Media program is that we learn best by doing ourselves. While the main point of this course is to experience Interactive Media in the world, we will best appreciate this when we ourselves have learned and applied Interactive Media principles to create our own systems, both individually and in collaboration with others. Thus, while the course consists of lectures and other presentations by designers, artists, and other practitioners, you are expected to get your hands dirty, to build circuits, to write programs and to understand both the frustration of getting things to work and the thrill when it all comes together. You will be doing work in and outside of the class that is ideally experimental, participatory, and collaborative. When technical content is delivered you will be expected to work along with the lecture. Visits to workshops, labs, studios, and other sites of creation, and conversations with the practitioners will give us insight into the wide range of approaches. Critical skills will be developed in discussion based on readings and presentations. Each student will make a short presentation.

Participation:

This class is highly interactive, and students are expected to engage critically with the material by asking questions and by offering their constructive insights, understanding, observations, and opinions to the instructor, guest presenters, and fellow students. This engagement is required and is part of the grade.

Course Materials:

Required Course Materials

SparkFun Inventor's Kit for Arduino Uno https://www.sparkfun.com/products/15631

Recommended Course Materials

Title: Getting Started with Arduino Author: Massimo Banzi and Michael Shiloh ISBN: 978-1449363338 Publisher: Make Community, LLC Publication Date: June 6, 2015 Edition: 3rd

Title: Getting Started with Processing Author: Casey Reas and Ben Fry ISBN: 144937980X Publisher: Make Publication Date: July 2, 2010 Edition: latest

Title: Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction Author: Daniel Shiffman ISBN: 0123736021 Publisher: Morgan Kaufmann Publication Date: September 2, 2008 Edition: latest

Title: Arduino Cookbook Author: Michael Margolis ISBN: 1449313876 Publisher: O'Reilly Media; Second Edition Publication Date: 2011

Title: Make Electronics Author: Charles Platt ISBN: 0596153740 Publisher: Make Publication Date: 2009

Title: Making Things Talk 2ed Author: Tom Igoe ISBN: 1449392431 Publisher: Make Publication Date: 2011

Title: Making Things Move Author: Dustyn Roberts ISBN: 0071741674 Publisher: McGraw-Hill/TAB Electronics Publication Date: 2010

Recommended tools: Software : fritzing http://fritzing.org

Assignments and Grades

Grades

Activity	Grade Percentage
Class Participation	10%
Short Assignments	20%
Artist presentation	10%

Collaborative Projects	30%
Final Project	30%

Participation

A general rule about class participation is “quality is better than quantity.” The following scale will be used to grade participation overall (on a scale of 1-10):

10: Excellent preparation by in-depth reading of the assigned material, leads/contributes in a significant way to discussions, demonstrates consistent active involvement, and offers thoughtful analysis and critique of the course material.

8: Good preparation (knows facts, considers implications), offers interpretation and analysis, leads/contributes well in discussion and is consistently involved in the class.

6: Adequate preparation (knows basic facts of the readings but does not show evidence of trying to interpret and analyze), does not participate voluntarily in discussions, demonstrates sporadic involvement

4: Poor preparation (has a superficial knowledge and understanding of the readings), tries to respond when called on, infrequent involvement in discussions, or speaks without engaging with the reading or classmates’ comments.

2: Very poor preparation (no evidence for reading assigned material), does not respond substantially when called on, participates very rarely in discussions.

0: No participation

Assignments

Short Assignments: See the schedule below

Artist presentation: Each student will make a short (15 minute) presentation on an inventor, artist, designer, etc. of their choice

Collaborative Projects

- With Shenkar students: Each small group will design a system to address a particular interactive experience. The system may involve technology or may use other mediums. Each group will present their work with a clear analysis of the problem they are addressing and how their system addresses it.

- With Moona students: Each small group will design and construct a prototype mechatronic system. Each group will present their work with a clear explanation of the goal of the project and a description of how their system achieves that goal

Final Project: Students will work in groups to create a final project integrating multiple concepts learned in the course.

Course Schedule

Day 1. Wednesday June 1 – first day class

- Lecture:
  - Orientation
  - Introduction to Entrepreneurship (Nir Tsuk)

- Activities: Group warmup exercise and introduction to physical construction (find things, build something)
- Soldering workshop

Day 2. Thursday June 2

- Activities: Visit artists (Liat Segal , Lior Zallmanson)
- Lecture: Introduction to Interactive Media, Introduction to Arduino (basic digital input and output)
- Short assignment due:

- Microcontrollers, the basics (reading)
- Digital Input & Output (reading)
- Chapter 1 of The Design of Everyday Things, The Psychopathology of Everyday Things (reading)

Day 3. Friday June 3 (legislative day)

- Activity: Group project at Moona (Assaff Brimer) http://www.moona.co/en
- Short assignment due:
  - Physical Computing's Greatest hits and misses (reading)

Saturday June 4 – no lessons

- **Bus to Jerusalem**
- Tour of Jerusalem
- **Overnight in Jerusalem**

Sunday June 5 – Shavuot holiday, no lessons

- Masada and Dead sea
- Overnight in Jerusalem

Day 4. Monday June 6

- Activity: Museum on the Seam
- Activity: Musrara School of Art
- Lecture: Innovation and Interactive Media (Dan Shaham)

Overnight in Jerusalem

Possible day at Shenkar, present projects, maybe lecture on HCI, possibly students from shenkar join all day is open Michal prefers morning (discuss with michal end of april)

Day 5. Tuesday June 7

- Activity: Jerusalem Science museum, Bezalel art program
- Lecture: Designing interactive museum exhibits (at the museum)
- **Return to Tel Aviv**
- Short assignment due:
    - Readings on exhibit design (TBA)

Joint project with Michal 1:30-3:15

Day 6. Wednesday June 8

- Activities: Shenkar visit and beginning of collaborative projects with Shenkar students
- Lecture: Arduino analog input and output, simple interactive system

Day 7 Thursday June 9

- Activity: Follow-up visit to Shenkar
- Lecture: Advanced Interaction
- Short assignment due:

Simple interactive project using what we've learned with Arduino: Using at least 3 switches and 3 LEDs, create a simple system that does something unusual, surprising, or enchanting.

Day 8: Friday June 10 (legislative day)

- Activity: Rapid prototyping construction techniques
- Lecture: Discussion with Gaza Sky Geeks

Saturday June 11 – no lessons

Day 9: Sunday June 12

- Activity: Discussion: Evaluation and critique of group projects with Shenkar, Moona
- Artist presentation
- Final project introduced, teams formed

Day 10: Monday June 13

- Activity: Community workshops and Assistive Technologies (WeWork, Tikun Olam Makers)
- Lecture: Hands-on rapid prototyping with electronics workshop
- Short assignment due:
    - Proposal for final project, which is a group project. Your final project may be artistic, commercial, assistive, or exhibitory in nature. You may use any of the techniques learned in this class along with others you may know.

Day 11: Tuesday June 14

-Activity: Special effects model makers (Mickey Martin, Rafael Mizrachi), Tel Aviv Makers International (TAMI)
- Artists visits: Tsila Hassine, Holon Institute of Technology, Israel Center for Digital Art

Day 12: Wednesday June 15

- Lecture: Steinhardt museum of Natural History
- Activity: Rapidly prototype a museum exhibit
Israel HCI at Haifa

Day 13: Thursday June 16 – last day class

- Final project presentations, course feedback and discussion, farewell dinner

Policy Statements:

Attendance Statement:
Due to the condensed nature of J-term, each absence is the equivalent of missing a full week in a regular semester - with less of an opportunity to make up for missed material. Each unexcused absence results in the deduction of one mark from the final course grade (e.g. from an A- to a B+). Excusing absence is at the discretion of the instructor. Students who miss more than three classes, excused or unexcused, cannot pass the course. If the absences are excused, the student will be withdrawn from the course. If more than one of the absences is unexcused, the student will fail the course.

Academic Integrity:

At NYU Abu Dhabi, a commitment to excellence, fairness, honesty, and respect within and outside the classroom is essential to maintaining the integrity of our community. By accepting membership in this community, students, faculty, and staff take responsibility for demonstrating these values in their own conduct and for recognizing and supporting these values in others. In turn, these values create a campus climate that encourages the free exchange of ideas, promotes scholarly excellence through active and creative thought, and allows community members to achieve and be recognized for achieving their highest potential. As part of the NYU global network, NYUAD students are also subject to NYU's all-school policy on Academic Integrity for Students at NYU. Alleged integrity violations are resolved using NYUAD's Academic Integrity Procedure

Moses Center for Student Accessibility (CSA): mosescsa@nyu.edu
New York University is committed to providing equal educational opportunity and participation for students with disabilities. CSA works with students to determine appropriate and reasonable accommodations that support equal access to a world-class education. Confidentiality is of the utmost importance. Disability-related information is never disclosed without student permission. If you have any questions or would like to have further information about the Moses Center, please visit the following link.

Health Resources:
As a University student, you may experience a range of issues that can interfere with your ability to perform academically or impact your daily functioning, such as heightened stress, anxiety, difficulty concentrating, sleep disturbance, strained relationships, grief and loss, personal struggles. If you have any well-being or mental health concerns please visit the Counseling Center on the ground floor of the campus center from 9am-5pm, Monday - Friday, or schedule an appointment to meet with a counselor by calling: 02-628-8100, or emailing: nyuad.healthcenter@nyu.edu. If you require mental health support outside of these hours, call NYU's Wellness Exchange hotline at 02-628-5555, which is available 24 hours a day, 7 days a week. You can also utilize the Wellness Exchange mobile chat feature, details of which you can find on the student portal. These services are available remotely for students studying outside of the UAE.