CART310: Interaction Design Studio

Winter 2018; 3 credits; Tuesday 13:30 to 17:30

Instructor	**FREDERICKS, THOMAS O.**
Contact	http://designcomputedarts.slack.com Office hours by appointment only
Class Website	http://wiki.t-o-f.info/CART310
Prerequisite	CART 210; 24 credits completed in a Computation Arts program or written permission of the Department.
Description	This course introduces the theories and practices of interaction design. Students learn about interaction design from the early history of computers and computation through to present-day best practice and experimental approaches still being developed. In the studio portion of the course, students apply the theory introduced by developing specific prototype works in multiple forms, including paper, video and digital prototypes.
Key Words	Interactor-centered design, Fluxus, augmented spaces, public spaces, computer vision, generative design, integration, minimalism, transducers.
Goals	Explore tangible and intangible interaction design through the creation of three projects. Learn Cyling `74's Max.
Required Equipment	1x **Circuit Playground Express** (https://www.adafruit.com/product/3333). Alternatively, students can use another model of Arduino with the addition of a photocell but will not have as many creative options.
Optional Equipment	1x **Mini LED Arcade Button - 24mm** (LED must light with 3.3 Volts) like https://www.adafruit.com/product/3429 1x **Kinect V2 with** *computer adapter*. Alternatively, students can use a Kinect V1 but will be severely limited in creative options. 1x **USB camera with** *manual focus* (infrared capability is a bonus).
Projects	<u>Mapping, 20% in small groups</u> Demonstrate a basic understanding of Max and the Circuit Playground Express. Create an original **mapping** between one of the Circuit Playground Express' sensors and an audiovisual manifestation in Max. **All audio and visual media must be original content** created by the students. Example: http://www.scottmadethis.net/interactive/still_life/ <u>Translational Reality, 20% in small groups</u> Demonstrate creativity and understanding of low-level mechanics of interface design. Create a project that mixes the virtual and the real through a simple interface. Students must try to be as imaginative as possible while making design choices related to the user experience. Hack, design, buy or build an adapted interface that must demonstrate the multiple ways a user can express

control and intention through a single sensor (for example a *Mini LED Arcade Button*). Here is an example of all the ways a single button can be used to express many actions: https://www.kongregate.com/games/Ninjadoodle/one-button-bob

The project must be presented in class. A 1-minute video documentation must be sent to the instructor by Slack one week after the presentation at the latest. Use the following guidelines for the recommended encoding settings: http://tinyurl.com/kzkq3yo The video documentation must include on screen text that explains: **What does the user do and how can he understand what to do?** Also, clearly establish if your project is expressive, instrumental or instructional.

Beyond Transforming Mirrors, 50% in larger groups

Demonstrate a mastery of the basic principles of interaction design and develop a project that builds upon Transforming Mirrors as defined by David Rokeby. The project must integrate human pose detection or face detection (with the Kinect or Deep Learning) in an original experience tailored for presentation in a public space for **multiple users**. Address the common pitfalls related to this type of interaction and develop an evolving concept that goes beyond mapping the user or building an interface. How can technology not only augment reality but transform the relationship between multiple simultaneous users?
Example of a single user experience: https://www.youtube.com/watch?v=YyIWzapmOLI
Example of a multiple user experience: http://jsjoust.com/

All audio and visual media must be original content created by the students.

Two weeks before presenting the project, student groups must fill out a project proposal that must be accepted by the instructor.

The project must be presented in class. A 1-minute video documentation must be sent to the instructor by Slack one week after the presentation at the latest. Use the following guidelines for the recommended encoding settings: http://tinyurl.com/kzkq3yo The video documentation must include on screen text that explains: **What does the user do and how can he understand what to do?** Also, clearly establish if your project is expressive, instrumental or instructional.

Attendance, identification form & individual engagement, 10%

Students must fill out a student information form that must be submitted by Slack on the second week of class.

Students must be present for the full four hours of class time to be considered present in class. Absence from two classes (without reason) will result in 0% out of 10% for their attendance. Further absences without proper support paperwork will result in a failing grade. Arriving late to class is considered a half absence.

| Evaluation | Groups will present their work during specific classes and will be expected to participate in the collective critique process. This course is about collaboration and collective learning/sharing/dialogue. Members of the group must be responsible for and to each other as major projects are group grades. A grading template will be handed out for each project. |

While there is a strong emphasis on the technical implementation creativity and resourcefulness will be evaluated as strongly.

While the instructor will teach Max, students may use any software they feel comfortable with for their second and final projects.

Grading	Please refer to the department syllabus for details of policies rights and responsibilities, and code of conduct.

A Outstanding/Excellent The work is an outstanding interpretation of the assignment, demonstrating critical thinking, careful attention to detail and planning. Excellent in both content and form, it is well crafted, insightful, and surprising in its originality.

B Very Good The work demonstrates a strong interpretation of the assignment's requirements in concept, content and form. It would benefit from a more original approach, and/or formal refinement

C Satisfactory The work demonstrates a sufficient interpretation, fulfilling the assignment's basic requirements. However, some aspects of the development and outcome are missing or lack completion.

D Marginal Pass The work demonstrates a minimal interpretation of the assignment.

F Fail The work does not fulfill the assignment requirements.

Projected Schedule	1 – January 8	Class presentation – Student information form
	2 – January 15	**Student information form submission** – introduction to Max
	3 – January 22	What is interaction? – video and sound in Max
	4 – January 29	Algorithms – sending tangible data to Max
	5 – February 5	Vizzie and groove~ in Max
	6 – February 12	Presentations of **Mapping** projects
	7 – February 19	Interface design – 3D in Max
	(8 – February 26)	*No class*
	9 – March 5	Presentations of **Translational Reality** projects
	10 – March 12	Introduction to the Kinect – **Translational Reality** video documentation submission deadline
	11 – March 19	Agile workflow and interaction in public spaces
	12 – March 26	Workshop – **Beyond Transforming Mirrors** project proposal submission
	13 – April 2	Workshop
	14 – April 9	**Beyond Transforming Mirrors** presentations
	(15 – April 16)	*No class –* **Beyond Transforming Mirrors** video documentation submission deadline
Updated Schedule	http://wiki.t-o-f.info/CART310	

Department of Design & Computation Arts Teaching Lab Policy

The Labs

The department of Design & Computation Arts provides students and faculty access to four Labs (and associated resources) to support curriculum-based research and projects.

The Labs are:

a) EV 7.765 - Sensor / Surface Lab

b) EV 7.760 - Computation Lab

c) EV 7.765 - Visual Communication Lab d) EV 6.732 - Documentation Lab

See fee guidelines

Hours of Operation

The hours of operation are posted online (please refer to the website for the specific lab http://www.concordia.ca/finearts/design/facilities.html) and at the entrance to each lab respectively.

Access & Reservations

In order to reserve a time slot please contact the appropriate Lab Co-ordinator via email or in person. Each person will be allowed to reserve a time slot for a period of up to four hours a day, with the maximum of two days in a row. A reservation will be held for a 15-minute grace period. After 15-minutes, the session will be

given to any student(s) waiting.

Co-ordinator Emails:

a) sensor.lab@concordia.ca

b) computation.lab@concordia.ca

c) visual.communication.lab@concordia.ca d) documentation.lab@concordia.ca

The Labs welcome all DART & CART students who have paid the Departmental Fee.

The workshop schedules are posted online (please refer to the website for the specific lab http://www.concordia.ca/finearts/design/facilities.html and at the entrance to each lab respectively.

Equipment Loans

Certain equipment is available to students for a short-term loan, with conditions and availability subject to approval of the lab Co-ordinator. In order to loan equipment, students are asked to leave their student id card, phone number and email address. Students are expected to respect the terms of the loan, use loaned equipment with care, and return the equipment in same condition they received it.

Liabilities

Students are liable for the repair or replacement cost of any equipment they borrow from the Labs, which has been lost or damaged whilst in their possession.

NO FOOD OR DRINK IS ALLOWED IN THE LABS.

At the end of each semester, the workstations are wiped clean in preparation for the next semester. Therefore, please ensure that you have backed up all your files before you leave.