

San José State University
Art & Art History
Art 106, The Human Machine Interface
Section 1, Spring 2021
Subtopic: (Gesture Interfaces, Digital Kinematic Machines)

Instructor: Steve Durie

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Office Hours: Wed 6:15-7:15pm Thursday 1:30pm-2:30pm

Class Days/Time: Tues & Thursday 3pm- 5:50pm

Classroom: Mode 4 (hybrid mode) Art Building, Room 237

Course Description

Introduction to the issues, techniques and methods of human-machine interaction as defined in the different cultural, political, and scientific contexts. Exploration of advanced concept development, software and interface design and methods, using mobile computing and telepresence related platforms.

Course Goals:

This course addresses conceptualization, design and production of art with respect to human computer interaction. The class focuses on developing conceptual and technical strategies for creating human machine interaction based art that are based on various ideas about interface language and artifacts. Subjects addressed in the class include: human cognition and machine interaction, the nature and meaning of the cyborg, machine and human learning utopian and dystopian technology, computer and electronic systems interface systems & simple and complex interaction models.

Course Learning Outcomes (CLO)

Upon successful completion of this course students shall:

CLO1 - Be able to construct a variety of personal experimental approaches and techniques for creating human machine interaction based art.

CLO2 - Be able to assemble simple electronic interactive systems based on a variety of interface and control components.

CLO3 - Be able to build custom circuitry with electronic fabrication techniques for rapid prototyping.

CLO4 - Identify and evaluate various technical options when creating digital human machine electronic systems.

CLO5 - Develop aesthetic criteria for evaluating how to design and produce human machine based art systems.

CLO6 - Build strategies to document artwork and creative process

CLO7- Recite a working knowledge of different approaches and philosophies on the subject of creativity & systems.

Required Texts/Readings, Tool and Materials

Text: Natural Born Cyborgs by Andy Clark

Various ELECTRONIC TOOLS & PARTS NEEDED LIST TBA

Classroom Protocol

Student Responsibilities

- Students are responsible for all information presented in lectures and demonstrations, and through assigned readings and web related research.
- Students will present and critique their projects in class and on-line on the given due dates.
- Students are responsible for finding time to come in to the lab to complete assignments or use their own computer. Computer use and software is made available to students, it is your responsibility to take advantage of this or to purchase your own machines and software.
- Most importantly students are responsible for actively engaging in the course material by completing all course assignments and readings.
- During the course of the semester we will undoubtedly talk about things which are at the fringes of our society. If at any time you find the subject or content of this course compelling or problematic you are encouraged to discuss it. If however you find a presentation offensive you are encouraged to quietly, without

disrupting the class, excuse yourself. It is then your responsibility to contact the instructor for make-up work.

- Additionally students are responsible for their own well being with in the University system. If you need help, it is your responsibility to ask for it.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the [current academic calendar](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/) web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes. Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

University Policies

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The [University's Academic Integrity policy](http://www.sjsu.edu/senate/S07-2.htm), located at <http://www.sjsu.edu/senate/S07-2.htm>, requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sa.sjsu.edu/judicial_affairs/index.html) is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the [Disability Resource Center](http://www.drc.sjsu.edu/) (DRC) at <http://www.drc.sjsu.edu/> to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer

labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

Learning Assistance Resource Center

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to inspire them to become independent learners. The Center's tutors are trained and nationally certified by the College Reading and Learning Association (CRLA). They provide content-based tutoring in many lower division courses (some upper division) as well as writing and study skills assistance. Small group, individual, and drop-in tutoring are available. Please visit [the LARC website](http://www.sjsu.edu/larc/) for more information at <http://www.sjsu.edu/larc/>.

Project Grading Criteria:

- A. Review of Planning skills, Comps and "Demoing"
- B. Formal and Technical Achievement
- C. Innovative Response and Conceptual Approach

Assignment Grading

Assignment 1 -- 1%

Assignment 2 -- 4%

Assignment 3 -- 14%

Assignment 4 -- 6%

Assignment 5 -- 18%

Assignment 6 -- 30%

Readings and Quizzes -- 15%

Web Documentation -- 2%

Participation Log for in class Lectures, Discussions, Critiques, etc. -- 10%

Class Total: 100%

Extra Credit (research, field work) -- TBA, Instructor consent is required.

Grade Scale

97-100 = A+, 93-96 = A, 90-92 = A-, 87-89 = B+, 83-86 = B, 80-82 = B-, 77-79 = C+, 73-76 = C, 70-72 = C-, 67-69 = D+, 63-66 = D, 60-62 = D-, 59 and below = F

Laboratory Access:

Building access cards will be available for weekend and night access.

All lab policies must be observed at all times. Access times are posted on lab doors.

Emergency:

Phone: 911, Escort Service: 42222

Americans with Disabilities Act

Individuals with disabilities may contact the Disability Resource Center on campus, 924-6000.

Classroom Protocol

Readings, Discussions:

There will be reading assignments related to each project given out over the semester. We will have class discussions about the material. You will be expected to contribute to the issues brought up. Remember, reading the material is not enough; you have to communicate your thoughts on the matter in class.

Participation:

Participation is a large component of the class. Involvement in the readings, discussions, critiques, class collaborations, field trips and final presentations are critical for each student and the class to excel. You will be graded on your engagement in the ideas and your interaction with the instructors and other students.

Collaboration:

Students will collaborate with each other on the several projects. However the resulting collaboration will be evaluated expecting a higher degree of achievement. Students doing collaborative projects must plan out what their roles will be and keep a journal (task sheet) about the project so they can be graded individually in terms of their technical and conceptual skills.

Important: Collaborations must be approved by the instructor and will not be accepted otherwise.

Class Dynamics and consideration:

For the class to function well and for everyone to understand material and participate in the class accordingly, that every effort should be made to be considerate for both the instructor and other students while in class.

So please come to class understanding the following:

- You will be prepared with your laptop computer and all teaching material ready
- cellphones off, this means no texting as well.
- No food except when instructor allows it. Drinks ok.
- No playing of video games, movies, & music outside of the class context
- Refrain from excessive social software use while class is in session.
- No excessive socializing when class is in session.
- No Disruptive behavior, when conflicting with the class instruction or activities.
- Leave the classroom better then you found it; please don't leave papers, other class projects or any kind of mess behind. Be fancy and put some chairs under the desk, and tidy up the place.

Disregarding any of these rules gives the instructor the option to ask you to leave the class until the next session.

Additional Polices for Mode 4 Hybrid Online Classes (Zoom and Campus)

Zoom Class

- The class will be meeting unless otherwise twice a week 'on' Zoom teleconference software at the normal date and times posted for the class. The Link invites and other details with be provided by the Instructor.
- The student is expected to come prepared with a suitable working webcam and audio solution to be seen and communicate with the rest of the class.
- Given this is synchronous class there is an expectation that the class is to perform together as a group at the appointed times.. Therefore each student is responsible for attending the class zoom events to participate in lectures, critiques, as well as group assignments. This will be one of a several of ways you can earn your participation grade.
- In addition, you must present your work in class on the assigned date(s) to get full credit for the assignment. Failure to do so will result in a lowering of the grade.
- A failure to not present your Final Project in class on the date of the final meeting will not be accepted for a grade (F).
- Lastly, students are also required to show their face in class, when the class is interacting, in all class related functions. A certain percentage of the participation grade will be counted from your video presence and interaction exercises.

Material Pickup and on Campus Activities

- There will be several projects over the course of the semester requiring students to come on campus to pick up materials or to use specialized machinery and/or meet and work with other students and also share show the results of their physical projects with the Instructor.
- There will be a schedule provided (see below) for all on campus meetups.
- All meet ups in classrooms will be conducted with a 6 person limit and 45 minute rotation schedule for the classrooms we will be working in.
- All students must wear face masks that completely cover the nose and mouth. They must maintain at least 6-foot distances from other students and the instructor at all times. They must refrain from coming to campus if they feel sick or have a fever.
- The Instructor will work with students to accommodate various challenges regarding traveling time, etc. details tba.

Assignments:

Project 1 (solo micro project -- 1%). *Upgrade*

-- Use Image processing tools to make an illustrative diagram of you and your body with an 'upgrade' modifications. Make 2 images, 1 should contain functional/practical upgrades, the other should be lifestyle and aesthetic based choices.

Project 2 (solo micro project -- 4%). *SolderIt*

-- Create a simple electronic circuit and find a place in public where it does not belong, turn them on and document it.

Project 3 (solo project-- 14%)

Sensing Mood Machine that goes Bling

-- Use a micro controller and parts to make a simple programmable music/light machine. (Special Project with Guest Artist) Details TBA

Project 4 (group mini project -- 6%) *Duct Tape UI*

This project is based on simple techniques of prototyping for quick 'shoot from the hip' projects that will be performed in a group that investigate what one can do with both circuit bending and interface design as well as what can be done with the various gadgets you have available (i.e.(laptops, smart phones, web cams, GPS devices, multimedia & mapping software and collaboration). The content must address issues brought up in the readings and discussions. Details TBA

Project 5 (group project -- 18%) *Prototype*

– As a group,

Utilize micro-controllers and the concepts presented in class to come up with a group project that leverages your shared knowledge to make a single piece. Each student must bring to the group 1 area of investigation and research to share with others. Details tba

Project 6 (final project -- 30%) *Final*

-- Solo or Group

Take what was learned from the previous projects to either continue to its next milestone as a group or make an individual project that 'spins off' from it. Many options are open with instructor permission. The project scope, design, Presentation and collaboration roles, will require Instructor review. The content must address issues brought up in the readings and discussions. This Project also might be driven by a theme given possible opportunities with the final presentation. Your work will culminate in a presentation event that you and your group will have to participate in. Details TBA

Portfolio Documentation & Reading Blog (15%)

- Reading feedback: You will be expected to post a series of summaries and review when we have our reading discussions. Provide a response to the material with arguments and other relevant issues and topics to what is being considered.

- Project documentation: Provide adequate documentation of ALL your solo projects. This is even more important for your Final project.

- Group task sheet: A simple time-stamped list of the tasks that you did during the group projects. This will help me grade your work and participation in the group projects.

Class Participation (10%)

Participation in class discussions, events, critiques, helping others all contribute to this grade. In addition you will be graded on your help for a presentation event(s) at the end of the semester. You will create a log that records your participation over the semester.

NOTE: Documentation Required for Grading: All project to be accepted for grading must be posted on the class website and documented adequately to allow the instructor to find , assess and grade. **Failure to document your work will result in the material being counted as incomplete.**

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COURSE SCHEDULE

Art106 Schedule

The schedule is subject to change, check the class website for the latest version.

Estimated Hybrid Campus Dates: (PP) = campus parts pickup, (OCA) = On campus Activity

Week	Date	Topics, Readings, Assignments, Deadlines
1	Jan. 28	First day, Green sheet review, Intro Micro project 1, intro book
2	Feb. 2 Feb. 4	Reading 1 and in-class project 1 due, Intro Project 2 Discuss reading Ch: 1-2 of NBC & Project 2 lab work
3	Feb. 9 Feb. 11	Project 2 lab work (PP) Project 2 due
4	Feb. 16 Feb. 18	Project 3 Lecture and Lab Project 3 Lecture and Lab
5	Feb. 23 Feb. 25	Project 3 Review and Documentation prep (OCA) Project 3 Review and Documentation prep (OCA)
6	Mar. 2 Mar. 4	Discuss Ch: 4 of NBC and Intro Project 4 In Class work on Project 4 (PP)
7	Mar. 9 Mar. 11	In Class work on Project 4 Project 4 presentation due
8	Mar. 16 Mar. 18	Discuss Ch: 5-6 of NBC Project 5 prep (PP) Prototype Project 5 Intro, Project 5 prep (PP)

Week	Date	Topics, Readings, Assignments, Deadlines
9	Mar, 23 Mar. 25	In class work on Project 4 Presentation and Project 5 planning Team Project to demo some working devices Ex. 3 due
10	Mar. 30 Apr. 1	Spring Break No Class Spring Break No Class
11	Apr. 6 Apr. 8	Teams meet with Instructor One on One (OCA) Teams meet with Instructor One on One (OCA)
12	Apr. 13 Apr. 15	Project 5 Lecture & working day (OCA) Project 5 working day
13	Apr. 20 Apr. 22	Prototype Project 5 due & Final Project Intro Final Project in class exercise and lab
14	Apr. 27 Apr 29	<i>One on one meeting for Final Project 6</i> <i>Final Plan Presentation & lab</i>
15	May 4 May 6	Show progress on Final Project & lab Show progress on Final Project & lab
16	May 11 May 13	Project 6 review -- 1 on 1 Conference day – Project 6 working day
17	May 18 May 24	One on One conference (dead day) Final Project Presentation Monday 24th @2:45pm until 5pm