

Art 107 ~ Advanced Projects in Digital Media Art

Performance interfaces for audio, video, and data visualization

Department of Art & Art History

San José State University

Spring 2017

Instructor:	G. Craig Hobbs
Class Days/Time:	Tuesday/ Thursday 12:00pm – 2:50pm
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Description

Advanced Projects in Digital Media Art explores the intersection of art and technology through the creation of interactive artworks using object-oriented graphical programming, and interactive interfaces for audio, video, and data visualization. The course consists of workshops, tutorial assignments, and both individual and collaborative final projects. The course is taught in Max 7, a graphical programming environment for audio, video, interactivity and hardware interfaces. Using Max 7 students will build dynamic software applications using audio video, data, microprocessors and sensors for interactive art. The course will culminate in exhibition of projects at the Paseo Public Prototyping Festival and at Maker Faire 2017, as well as in-class end of semester presentations.

Prerequisite: ART 75 + ART 101 (Digital Media Art) or permission of instructor.

Course Goals and Student Learning Objectives

Art 107 teaches interactive technology with an emphasis on project-based creative research, design, software development and both individual and collaborative projects.

Upon completion of this course, students will be able to:

Student Learning Objectives	
LO1	Design and build software using Max 7
LO2	Generate meaningful human-computer interactions
LO3	Employ object-oriented programming in the creation of interactive artworks
LO4	Employ float and integer mathematics in the creation of interactive artworks
LO5	Deploy computer vision algorithms to generate interaction performance data

LO6	Deploy motion tracking sensors to collect and analyze interaction data
LO7	Work collaboratively to build software for individual and group exhibition
LO8	Present completed artworks in individual and group exhibitions

Your SSETF fees include a one-year license to Max 7

Learn more about Max 7 here ~ <http://cycling74.com/>

Course texts: Max 7 Tutorials, Documentation and Help

Students are required to study Max tutorials and documentation in class and on their own time as part of the curriculum <http://docs.cycling74.com/max7/> Additionally, a course links and resources PDF will be provided online via the Art 107 Canvas website.

California Universities and Colleges that teach Max

[http://cycling74.com/wiki/index.php?title=United_States/Canada_\(Schools\)#California](http://cycling74.com/wiki/index.php?title=United_States/Canada_(Schools)#California)

Canvas CMS

Copies of course materials - the syllabus, readings and course updates - are available via the SJSU Canvas course management system (CMS) <https://sjsu.instructure.com/>
<https://sjsu.instructure.com> All programming assignments must be submitted via Canvas. Canvas will also be used for announcements and any changes to the course schedule. Please make sure your Canvas contact works. Canvas is used extensively for this course.

Classroom Protocol

The course schedule provides dates, topics, and assignments *due on the day they are listed in the schedule, unless otherwise noted*. As a workshop course, attendance and participation is required. You are expected to attend class and will be required to participate in technical tutorials, software practice, and group projects. The coursework is cumulative and requires a commitment to practice to expand upon learned skills. You are expected to work independently, on your own time, and in collaboration with others.

Programming Practice

Your ability to advance in your programming ability is directly linked to the amount of time you commit to learning the software, troubleshooting and experimentation. Given the upper level designation of this class you are expected to produce advanced work of creative and aesthetic significance while tackling the technical aspects of programming.

Collaboration and Groups

Students working together will be graded based upon the success of the group, and should therefore plan accordingly to define roles and assure equal participation amongst collaborators at the beginning of group projects. Please inform the professor if you are having difficulties with the collaborative dynamic in your group before problems arise.

Art and Art History Library Liaison

The Art and Art History library liaison is **Rebecca Kohn**, an excellent resource for academic and creative research. The New Media LibGuides library page is located here ~ <http://libguides.sjsu.edu/NewMedia> You can also contact Rebecca via email at rebecca.kohn@sjsu.edu or 408-808-2061 for further assistance.

Assignments and Grading Policy

Assignment prompts will be provided via the Canvas CMS. All submission requirements are defined in the assignment prompt. See course schedule for complete topics and dates.

Date	Assignment	% pts
01/31	Assignment #1/ Interactive artwork link + 1-page paper	5%
02/16	Assignment #2/ Max hack patch	10%
03/02	Assignment #3/ MSP patch	10%
03/14	Assignment #4/ Jitter patch	10%
03/21	Assignment #5/ CV.jit + OpenGL patch	10%
04/06	Assignment #6/ Individual project proposal	10%
04/25	Assignment #7/ Individual projects proof of concept patch	10%
05/11	Assignment #8/ Individual final project	10%
05/16	Assignment #9/ Group final projects	15%
05/24	Assignment #10/ 3-page final paper assignment	10%
TOTAL		100%
<i>* All assignments must be submitted via Canvas on the due date above. Assignment due dates are also listed in the course schedule with a weekly breakdown of topics.</i>		

Grading Policy/ Rubric

A = 100 - 90% ~ Excellent = Student exhibits exemplary effort at comprehension and application of the required materials. All creative and programming work is engaging.

B = 89 - 80% ~ Average = Student completes assignments, and demonstrates a grasp of key programming and creative concepts. Student participates actively in the classroom.

C = 79 - 70% ~ Below Average = Student completes the assignment but may lack enthusiasm or drive to push the work into a detailed creative or critical space. The work lacks creative and aesthetic effort. The work is underdeveloped, incomplete or broken.

D = 69 - 60% ~ Unsatisfactory = Student does not complete the work as assigned. Substantial problems exist in student's work.

F = < 60% ~ Fail = Student does not submit work, or work is below unsatisfactory level.

Late Work Policy

Work is considered late if posted after the due date/time. The default time for submission of work is the beginning of class, unless specified otherwise in the schedule. For each day the work is late (marked each 24 hours by the day and time of original deadline), the work decreases by half a grade (a B+ goes to B-, a B- to a C+, etc.)

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs Syllabus Information web page located here ~

<http://www.sjsu.edu/gup/syllabusinfo/>

Art 107 Course Schedule Spring 2017

Note: Assignments are due on the day listed in the schedule, unless otherwise noted.

Week	Date	Topics, Assignments, Deadlines
1	01/26	Course intro, syllabus overview, software
2	01/31	Introduction: Interactivity as art Introduction(s) to technique, aesthetics, and examples Assignment #1 due = 1 page single-spaced paper and link(s) describing an interactive artwork which you consider creatively and technically exceptional, and explain why
	02/02	Intro to Max 7 ~ Software as art Introduction to software, tutorials, resources and help
3	02/07	Max 7 ~ Patchers and objects Patchers, objects, numbers, floats, ints and more documentation
	02/09	Max messages and debugging Hello & Bang! Message order and debugging
4	02/14	More Max objects Recursive patching and hacking, encapsulation
	02/16	Max math Numbers, expressions and lists Assignment #2 due = Hack 3 Max tutorials into one working patch
5	02/21	Max data objects Data input and collection
	02/23	Max data collection object Data collection using the coll object. Coll and preset object workshop

Week	Date	Topics, Assignments, Deadlines
6	02/28	MSP/ Max data flow Controlling data flow for sound generation in MSP
	03/02	MSP Audio Synthesis Signal generators and sound in Max Assignment #3 due = MSP patch using the coll object to parse data
7	03/07	Jitter Workshop I QuickTime movies and matrices (video as data)
	03/09	Jitter Workshop II OpenGL in Max (render contexts, gridshapes and videoplanes)
8	03/14	Jitter Workshop III/ CV.jit Introduction to computer vision Live video input using video tracking algorithms (CV.Jit) Assignment #4 due = Jitter patch using matrix and preset objects
	03/16	Jitter IV Functional programming for input and interaction workshop
9	03/21	Max/ MSP/ Jitter Final Project Proposal Assignment Given Assignment #5 due = Jitter tracker patch using live input to trigger and modulate Jitter matrices and/ or Jit.GL shaders
	03/23	Max/ MSP/ Jitter Workshop Review session and programming practice
SPRING BREAK/ 03.27 through 03.31 (No class, enjoy your spring break!)		
10	04/04	Paseo Prototyping Festival I Prepare CADRE projects for presentation at Paseo Prototyping Festival
	04/06	Paseo Prototyping Festival II Prepare CADRE projects for presentation at Paseo Prototyping Festival Assignment #6 due = Proposals for individual projects
11	04/11	Individual Project workshop #1 Workshop intensives for individual projects
	04/13	Individual Project workshop #2 Workshop intensives for individual projects

Week	Date	Topics, Assignments, Deadlines
12	04/18	Individual Project workshop #3 Workshop intensives for individual projects
	04/20	Individual Project workshop #4 Workshop intensives for individual projects
13	04/25	Proof of concept patch demos presented in class Assignment #7 due = Individual projects proof of concept patch
	04/27	ATC/ Maker Faire Exhibition Planning/ Student Groups Workshop intensive for final group projects
14	05/02	Maker Faire Exhibition Group Project Workshop #1 Workshop intensive for final group projects
	05/04	Maker Faire Exhibition Group Project Workshop #2 Workshop intensive for final group projects
15	05/09	Final project presentations I/ II Final project presentations and critiques
	05/11	Final project presentations II/ II Final project presentations and critiques Assignment #8 due = Individual final projects
16	05/16	Exhibition setup for Maker Faire Preparation for Maker Faire exhibition/ May 19th - 21st Final projects setup and tested on DMA computers <i>Note: Maker Faire load in is May 18th for attendees</i> http://makerfaire.com/bay-area/call-for-makers/ Assignment #9 due = Group final projects
Final Exam	05/24	Wednesday, May 24th 9:45am – Noon Assignment #10 due = 3-page final paper
		<i>Note: This schedule is subject to change. You will be notified of any changes in a timely manner. Any changes will not affect your ability to complete the assigned coursework.</i>