Art 107 ~ Advanced Projects in Digital Media Art
Performance interfaces for audio, video, and data visualization

Department of Art & Art History
Digital Media Art Program Area
San José State University Spring 2016

Instructor: G. Craig Hobbs
Class Days/Time: Tuesday/Thursday 12:00pm – 2:50pm
Classroom: Art 237
Email: gcraig.hobbs@sjsu.edu
Office Location: Art 319
Office Phone: 924-4401
Office Hours: Wednesdays 12:30 – 2:30pm or by appointment

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 performance 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 live performance. The course will culminate in a live performance collaboration with the School of Music and Dance, in addition to individual final projects presented at the end of the semester.

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:

<table>
<thead>
<tr>
<th>Student Learning Objectives</th>
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<td>LO7</td>
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<td>LO8</td>
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</table>
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

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.

Collaborative Performance
The course will culminate in a live performance collaboration with the School of Music and Dance, in addition to individual projects presented in class. Students will work closely with faculty and staff to participate in the end-of-semester collaborative work.

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 for further academic research assistance.
Assignments and Grading Policy
Assignment prompts will be provided on Canvas. See course schedule for more details.

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<thead>
<tr>
<th>Date</th>
<th>Assignment</th>
<th>% pts</th>
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<tbody>
<tr>
<td>02/02</td>
<td>Interactive performance link + 1-page paper assignment</td>
<td>5%</td>
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<tr>
<td>02/18</td>
<td>Assignment #2/ Max patch</td>
<td>10%</td>
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<tr>
<td>03/03</td>
<td>Assignment #3/ MSP patch</td>
<td>10%</td>
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<tr>
<td>03/15</td>
<td>Assignment #4/ Jitter patch</td>
<td>10%</td>
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<tr>
<td>03/22</td>
<td>Assignment #5/ CVjit + OpenGL patch</td>
<td>10%</td>
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<tr>
<td>04/07</td>
<td>Assignment #6/ Individual project proposal</td>
<td>10%</td>
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<tr>
<td>04/14</td>
<td>Assignment #7/ Live performance project presentation</td>
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<tr>
<td>04/26</td>
<td>Assignment #8/ Individual projects proof of concept patch</td>
<td>10%</td>
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<tr>
<td>05/10</td>
<td>Assignment #9/ Individual final project presentation</td>
<td>15%</td>
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<tr>
<td>05/12</td>
<td>Assignment #10/ 3-page final paper assignment</td>
<td>10%</td>
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<td>TOTAL</td>
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<td>100%</td>
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*All programming assignments must be submitted via Canvas on the due date above. Assignment due dates are also listed in the course schedule. If you have any questions regarding assignments, please contact the professor in advance of the due date.*

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.).
### Art 107 Course Schedule  
**Spring 2016**

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics, Assignments, Deadlines</th>
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<tbody>
<tr>
<td>1</td>
<td>01/28</td>
<td>Course intro, syllabus overview, software</td>
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</table>
| 2    | 02/02  | **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 performance artwork you consider  
creatively and technically exceptional, and explain why |
|      | 02/04  | **Intro to Max 7 ~ Software as art**  
Introduction to software, tutorials, resources and help |
| 3    | 02/09  | **Max 7 ~ Patchers and objects**  
Patchers, objects, numbers, floats/ ints and more documentation |
|      | 02/11  | **Max messages and debugging**  
Hello & Bang! Message order and debugging |
| 4    | 02/16  | **More Max objects**  
Recursive patching and hacking, encapsulation |
|      | 02/18  | **Max math**  
Numbers, expressions and lists  
**Assignment #2 due =** Hack 3 Max tutorials into one working patch |
| 5    | 02/23  | **Max data objects**  
Data input and collection |
|      | 02/25  | **Max data collection object**  
Data collection using the coll object. Coll and preset object workshop |
| 6    | 03/01  | **MSP/ Max data flow**  
Controlling data flow for sound generation in MSP |
|      | 03/03  | **More MSP**  
Signal generators and sound in Max + Max For Live devices  
**Assignment #3 due =** Data patch using the coll object to parse data |
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<tbody>
<tr>
<td>7</td>
<td>03/08</td>
<td><strong>Jitter Workshop I</strong>&lt;br&gt;QuickTime movies and matrices (video as data)</td>
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<td>03/10</td>
<td><strong>Jitter Workshop II</strong>&lt;br&gt;OpenGL in Max (render contexts, gridshapes and videoplanes)</td>
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<td>8</td>
<td>03/15</td>
<td><strong>Jitter Workshop III/ CV.jit</strong>&lt;br&gt;Introduction to computer vision&lt;br&gt;Live video input using video tracking algorithms (CV.Jit)&lt;br&gt;&lt;strong&gt;Assignment #4 due = Jitter patch using matrix and preset objects**</td>
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<td>03/17</td>
<td><strong>Jitter IV</strong>&lt;br&gt;Functional programming for input and interaction workshop</td>
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<td>03/22</td>
<td><strong>Max/ MSP/ Jitter</strong>&lt;br&gt;Final Project Proposal Assignment Given&lt;br&gt;&lt;strong&gt;Assignment #5 due = Jitter tracker patch using live input to trigger and modulate Jitter matrices and/ or Jit.GL shaders**</td>
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<td>03/24</td>
<td><strong>Max/ MSP/ Jitter</strong>&lt;br&gt;Review session and performance practice</td>
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<td><strong>SPRING BREAK/ 03.26 through 04.03 (No class, enjoy your spring break!)</strong></td>
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<tr>
<td>10</td>
<td>04/05</td>
<td><strong>Performance rehearsals and software optimization</strong></td>
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<tr>
<td></td>
<td>04/07</td>
<td><strong>Performance rehearsals and software optimization</strong>&lt;br&gt;&lt;strong&gt;Assignment #6 due = Proposals for individual projects**</td>
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<tr>
<td>11</td>
<td>04/12</td>
<td><strong>Final Performance Rehearsal with School of Music and Dance</strong></td>
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<td></td>
<td>04/14</td>
<td><strong>Live performance exhibition evenings of April 13&lt;sup&gt;th&lt;/sup&gt;, 14&lt;sup&gt;th&lt;/sup&gt;, 15&lt;sup&gt;th&lt;/sup&gt;, 16&lt;sup&gt;th&lt;/sup&gt;</strong>&lt;br&gt;&lt;strong&gt;Assignment #7 due = Live performance projects presented**</td>
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<tr>
<td>12</td>
<td>04/19</td>
<td><strong>Individual Project workshop #1</strong>&lt;br&gt;Workshop intensives for individual projects</td>
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<td>04/21</td>
<td><strong>Individual project workshop #2</strong>&lt;br&gt;Workshop intensives for individual projects</td>
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<td>Week</td>
<td>Date</td>
<td>Topics, Assignments, Deadlines</td>
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| 13   | 04/26| Proof of concept patch demos presented in class  
Assignment #8 due = Individual projects proof of concept patch |
|      | 04/28| Maker Faire Exhibition Project Workshop #1  
Workshop intensive for final group projects |
| 14   | 05/03| Maker Faire Exhibition Project Workshop #2  
Workshop intensive for final group projects |
|      | 05/05| Maker Faire Exhibition Project Workshop #3  
Workshop intensive for final group projects |
| 15   | 05/10| Final project presentations  
Final project presentations and critiques  
Assignment #9 due = Individual final projects |
|      | 05/12| Exhibition setup for Maker Faire  
Preparation for Maker Faire exhibition opportunity May 20th – 22nd  
Final projects setup and tested on DMA computers  
(Note: Set-up will include Friday setups as needed)  
Assignment #10 due = 3-page final paper |
| Final Exam | 05/20| Friday, May 20th 9:45am – Noon/ Maker Faire Load-in |

*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.*
University Policies

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 section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services/academic_calendars/.

The Late Drop 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 at http://www.sjsu.edu/advising/.

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 S07-2, located at http://www.sjsu.edu/senate/docs/S07-2.pdf, 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 is available at http://www.sjsu.edu/studentconduct/.

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 Integrity 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 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

In 2013, the Disability Resource Center changed its name to be known as the Accessible Education Center, to incorporate a philosophy of accessible education for students with disabilities. The new name change reflects the broad scope of attention and support to SJSU students with disabilities and the University's continued advocacy and commitment to increasing accessibility and inclusivity on campus.
Student Technology Resources
Computer labs for student use are available in the Academic Success Center at http://www.at.sjsu.edu/asc/ located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. 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 DV and HD digital camcorders; digital still cameras; video projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

SJSU Peer Connections
The Learning Assistance Resource Center (LARC) and the Peer Mentor Program have merged to become Peer Connections. Peer Connections is the new campus-wide resource for mentoring and tutoring. Students are encouraged to take advantage of their services which include course-content based tutoring, enhanced study and time management skills, more effective critical thinking strategies, decision making and problem-solving abilities, and campus resource referrals. In addition to offering small group, individual, and drop-in tutoring for a number of undergraduate courses, consultation with mentors is available on a drop-in or by appointment basis. Workshops are offered on a wide variety of topics including preparing for the Writing Skills Test (WST), improving your learning and memory, alleviating procrastination, surviving your first semester at SJSU, and other related topics. A computer lab and study space are also available for student use in Room 600 of Student Services Center (SSC). Peer Connections is located in three locations: SSC, Room 600 (10th Street Garage on the corner of 10th and San Fernando Street), at the 1st floor entrance of Clark Hall, and in the Living Learning Center (LLC) in Campus Village Housing Building B. Visit Peer Connections website at http://peerconnections.sjsu.edu for more information.

SJSU Writing Center
The SJSU Writing Center is located in Suite 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The Writing Center staff can be found at http://www.sjsu.edu/writingcenter/about/staff/.