

**San José State University  
Department of Art & Art History  
Art 102, 3D Modeling and Printing, Section 01  
Fall, 2017**

**Course and Contact Information**

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<b>Office Hours:</b>	T/TH 1:45 PM -2:45 PM
<b>Class Days/Time:</b>	T/TH 3:00PM - 5:50PM
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**Course Description**

Introduce experimental 3D methods with a focus on conceptual and creative processes using Maya software and 3D printing technology while addressing contemporary uses for artistic Production.

**Course Learning Outcomes (CLO)**

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

LO1: Produce work in line with contemporary art practices.

LO2: Present created work in a professional manner.

LO3: Discuss ideas and concepts related to contemporary 3D digital art.

LO4: Complete original projects exploring the visual and conceptual language of experimental 3D.

LO5: Demonstrate knowledge of the works of some of the most important 3D animation/print artists/ projects.

LO6: Think critically about 3D methods from a digital media art context including 3D rendering, 3D printing, and time-based 3D methods.

LO7: Demonstrate technical skills to use Maya and other open source software.

### **Required Texts/Readings**

All the reading material will be available on Canvas.

### **Other equipment / material requirements**

External Hard-Drive: Students will need to purchase a hard-drive for this class. The hard drive must be 500 GB or bigger. 3-button Mouse: The use of a 3-button mouse is HIGHLY recommended. There are many Middle and Right Click Operations in Maya. I recommend a scroll-wheel middle button design.

### **Course Requirements and Assignments**

#### **Project 1: Prosthetic (Rendering)**

With a partner, make a 3D scan of your body. Import the scan into Maya and use basic modeling techniques to create a 'prosthetic' for yourself. Consider ways the addition of external technologies can enhance, modify, or restrict the ways the biological body interacts with the world. How can prosthetics augment our biological senses? In rendered space you are not bounded by physics or economic restrictions so I encourage you to press into the limits of what you think is possible and stretch the definition of 'prosthetic.'

#### **Project 2: Distributed Object (3D Print)**

You are responsible for modeling or combining elements from 3 or more found models to create a hybrid object that will be 3D printed. What happens when a virtual object is translated into physical material? Why print a virtual model? What can 3D prints do that other mediums can't? What does it mean that you can physically manifest something that someone else created in virtual space? How is the value of the object calculated given that a) it takes so long to produce something relatively small and b) the reproducibility of the object resists aspects of traditionally associated with the arts; namely originality and authorship. How is the object presented? Photographed? On a pedestal? Stop Motion Animation? Site Specific Installation? SJSU libraries offer 3D printing, but you must print your own model unless you can make a compelling argument for the distributed production. More here: <http://libguides.sjsu.edu/3d>

#### **Project 3: Still Life (Rendering + Textures)**

Create a scene with 3 or more objects with unique textures. How are virtual scenes different from painting or photography? How do the objects in your scene relate? What happens when you change the texture of an object? How does lighting effect the scene? How does the orientation (resolution) and position of the camera (and by extension the viewer) effect the way the scene is 'read'?

#### **Project 4: Animation**

Use the scene from Project 3 (or create a new scene) and make a 30-60 sec animation that seamlessly loops using basic rigging and keyframe animation techniques. How does animation change the way the work is read? How does each object move? What happens when one object moves and another doesn't? How does the gesture effect temporal texture? Is it calm? Anxious? Athletic? Natural? Artificial? Does the animation suggest real-time or compressed/expanded playback?

### **Project 5: Self Portrait**

Use the modeling techniques we have discussed so far to create an animated self portrait/avatar. This can be as 'realistic' or fantastic as you like. Rig the model and create an looping animation cycle. Consider the ways site, lighting, texture, and gesture interact to create a conceptual framework for the piece. Why does this NEED to be an animation? How is an animation different from traditional video? How is the portrayal of a virtual self different from a portrayal of your 'real' self? What kinds of things can happen in virtual space? What kinds of things can't happen in virtual space?

### **Artist Presentation**

Select an artist using 3D modeling techniques in their practice and give a 10 min presentation on their work. Use the readings and discussions from class to contextualize their practice within contemporary art/critical theory. Why is their work important and why is the use of 3D modeling necessary to their practice?

### **Final Project + 1500 Word PDF Artist/Research Statement**

Create a work of art using 3D modeling that synthesizes the ideas and techniques you learned in Art 102. Final projects may be presented in-class in physical and/or animated formats. Include a 4-page PDF layout with text, images, & hyperlinks that includes a 500 word artists statement, and a 1000 word research statement that addresses your process, influences, and conceptual/theoretical interests.

### **Grading Information**

Projects 1-5 60%

- Project 1: Prosthetic (Rendering) 12%
- Project 2: Hybrid Object(3D Print) 12%
- Project 3: Still Life (Rendering + Textures) 12%
- Project 4: Animation 12%
- Project 5: Self Portrait 12%

Artist Presentation 10%

Final Project 20%

Artist/Research Statement 10%

TOTAL 100%

### **Determination of Grades**

Each Project will be graded on the following three categories

- The Work 50%
- Description & Documentation 25%
- Participation in Class Discussions and Project Review Day 25%

The work will be assessed according to the following 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% Good.** Student completes assignments, and demonstrates a grasp of key programming and creative concepts. Student participates actively in the classroom.

**C 79-70% Satisfactory.** Student completes the assignment but the work lacks creative and aesthetic effort. The work is underdeveloped, incomplete or partially 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.

Description & Documentation must be submitted to BOTH Canvas and the Collaborative Presentations (you will not receive a grade until the following is submitted)

- Portfolio-Ready Documentation
  - Photograph (.jpg 1200 pixels on the long side)
  - Stills/Storyboard (.jpg 1200 pixels on the long side)
  - Video (link)
- Work list
  - Title
  - Medium
  - Size/Duration
- One paragraph description that includes
  - Process/Tools
  - Inspiration
  - Concept

Participation in Class Discussions and Project Review Day

- Students must be present on discussion and review days to receive credit
- Students who are not ready to present on review days must attend class to receive participation credit

### **Library Liaison**

Elisabeth Thomas ([elisabeth.thomas@sjsu.edu](mailto:elisabeth.thomas@sjsu.edu))

Website: <http://libguides.sjsu.edu/collectiondevelopment/CDhumanities>

### **Technology Intensive, Hybrid, and Online Courses**

This course requires access to a computer which can support Autodesk's Maya 3D modeling program (plenty of memory and a good graphics card). Students can use the lab computers or download the current edition of Maya. Free download for SJSU students here: <https://www.autodesk.com/education/free-software/maya>.

### **Canvas**

Course materials such as syllabus, schedule, handouts, notes, assignment instructions, etc. can be found on Canvas.

### **Classroom Protocol**

Show up on Time. If you need to miss a class, let me know ahead of time and tell me what you will do to make up the missed work and when you will turn it in. Everyone is required to find two partners that can help answer questions and fill you in on content if you need to miss a class.

- If you are absent, you are responsible for finding out what you missed from your team.

- I will respond to emails regarding makeup work only if they include an email thread showing that your team was unable to answer your questions.

**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](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>"

**ART 102/3D Modeling and Printing, Fall 2017, Course Schedule**

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/24	Course Introduction /Overview of Syllabus. Intro to Artists using 3D modeling
2	8/29	Lecture: File Formats and Basic Maya Navigation. Workshop: 3D Scanning. <b>Due: Reading 1</b> <b>Due: External Hard Drive with Exercise Files saved</b>
2	8/31	Lecture: Intro to 3D Mesh. Workshop: Sculpting in Maya. <b>Tutorial Due: Maya Basics</b>
3	9/5	Lecture: Lighting & Rendering. In-Class Studio Time. <b>Tutorial Due: Maya Lighting/Rendering with Arnold.</b>
3	9/7	<b>Project 1 Due: Prosthetic</b>
4	9/12	Lecture: Intro 3D Printing. Workshop: Preparing Files for 3D Printing. <b>Due: Reading 2</b>
4	9/14	Workshop: UP Printing and Introduction to 3D printing software. <b>Due: 3D Printing Tutorial PT1</b>
5	9/19	Workshop: Combining Meshes & Making Holes. <b>Due: 3d Files to your team.</b> <b>Tutorial Due: 3D Printing PT2</b>

5	9/21	Group Meetings & Model Reviews. In-Class Studio Time. <b>Tutorial Due: 3D Printing PT2</b>
6	9/26	<b>Project 2 Due: Distributed Object (3D Print)</b>
6	9/28	Lecture: Narrative and Placemaking. Workshop: Intro to Textures & Scene Setup. <b>Due: Reading 3</b>
7	10/3	<b>Student Presentations: Artists Working with 3D</b>
7	10/5	Workshop: Textures PT 2 Individual Meetings and In-Class Studio Time. <b>Draft Due: Wireframe Sketches for Project 3 (Still Life)</b>
8	10/10	<b>Project 3: Still Life (Rendering + Textures)</b>
8	10/12	Lecture: Introduction to Animation. Workshop: Key Frames & Timeline. <b>Due: Reading 4</b>
9	10/17	Lecture: Narrative & Storyboarding. Workshop: Basic Rigging. <b>Tutorial Due: Rigging Basics</b>
9	10/19	Workshop: Batch Rendering. <b>Tutorial Due: Bouncing Ball</b>
10	10/24	Individual Meetings & In-Class Studio Time. <b>Draft Due: Storyboard Project 4 (Animation)</b>
10	10/26	Individual Meetings & In-Class Studio Time. Draft Due: Scene Setup
11	10/31	<b>Project 4 Due: Animation</b>
11	11/2	Lecture: Avatars & Virtual Space. Workshop: Character Rigging. <b>Due: Reading 5</b>
12	11/7	Workshop: Walk Cycle. Tutorial Due: Animating Walk Cycle

12	11/19	Workshop: Loop Animation. Tutorial Due: Looping Animation
13	11/14	Guest Lecture. Individual Meetings and In-Class Studio Time. Due: Storyboard Project 5 Avatars
13	11/16	<b>Due: Project 5 Self Portrait</b>
14	11/21	Student Presentations: Proposal for Final Project
14	11/23	Holiday No Class. <b>Tutorial Due: Bullet &amp; Maya.</b>
15	11/28	Individual Meetings and In-Class Studio Time. Draft Due: Scene/Parts on Hand for Final
15	11/30	Individual Meetings and In-Class Studio Time.
16	12/5	<b>Due: Final Scene &amp; Rendering Started</b>
16	12/7	Student Paper Presentations. <b>Due: Draft Final Paper</b>
Final		<b>Student Project Presentations + Final Paper Due</b>

