

**California State University, Los Angeles**  
**College of Arts and Letters**  
**Department of Art**  
Art 4940: 3D Animation  
Spring Semester 2018

**This syllabus is subject to change due to class needs as judged by the instructor.**

<b>Instructor:</b>	Peter Gend
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<b>Office Hours:</b>	7:00am – 8:00am Thursday Rm. FA 227
<b>Class Days/Time:</b>	Thursday 8:00am- 1:40pm
<b>Classroom:</b>	Fine Art 225
<b>Prerequisites:</b>	Art 180 Intro to computer graphics

### **Description**

Collectively, this course will present to all students a focused study of high quality 3D animation using Maya as our platform.

Using existing models and rigs, we will engage in weekly lessons which cover a range of difference techniques and tools in Maya for 3D animation, as well as develop a keen eye for incorporating the 12 principles of animation into difference assignments.

### **Course Goals and Student Learning Objectives**

- To master the solid technical foundation in the animation techniques within maya
- Understanding expressive Character Animation and Acting
- To develop a keen eye for the craft of animation according to the 12 principles of animation:

### **Course Content Learning Outcomes**

- Possess a versatility in tools to control, and modify 3D animated content
- Create high quality animated material suitable for a demo reel.

### **Required Texts/Readings**

#### **Textbook**

- *The Animator's Survival Kit* by Richard Williams (ISBN-10: 0571202284)
- *The Illusion of Life* by Ollie Johnston and Frank Thomas (ISBN-10: 0786860707)

### Other equipment / material requirements (optional)

1. 500gb hard drive
2. Mirror

### Classroom Protocol

Students will be expected to attend every class on time; lateness and absence will result in deductions from the final grade.

Participation in classroom discussions will contribute to the final grade.

Cell phones are forbidden in class.

### Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Students should be aware of the current deadlines and penalties for adding and dropping classes: <https://get.calstatela.edu/Registrar.htm>.

### Assignments and Grading Policy

You will have seven assignments, the total of which will make up the majority of your grade. You will be given an indicative grade in week 8 in order to gauge your progress and make improvements.

Grade Weighting:

<b>Assignments (60 %)</b>
animation skill /40
technical skill /15
presentation /5
<b>Attendance and class participation (20%)</b>
Total attendance and effort in class during the quarter /20
<b>Final presentation (%20)</b>
understanding /20
<b>TOTAL /100</b>

Grading boundaries:

- A: 90-100%  
B: 80 – 90%

C: 70 – 80%

D: 0-70%

Penalties for late or missed work;

- Assignments must be turned in on time; you will lose points for late assignments.
- Arriving more than 810 minutes late/leaving more than 10 minutes early = 1 absence
- More than 5 unexcused absences = Automatic Fail
- Excused Absences Require Doctor or Official Notice, and accepted per Professor's Discretion.
- Expect to spend from four to eight hours a week on your work outside of class.
- Students are responsible for any material missed due to tardiness or absence.
- Readings, and assignments, and projects are expected at the beginning of class on their due dates.
- Late submissions will be lowered one grade per day late.

### **University Policies**

#### **Student Handbook**

Information on student rights and responsibilities, academic honesty, standards of conduct, etc., can be found in Schedule of Classes

(<http://www.calstatela.edu/classschedule/>) under Policies and Procedures.

#### **Americans with Disabilities Act (ADA)**

Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation.

## Course Number / Title, Semester, Course Schedule

*List the agenda for the quarter including when and where the final exam will be held. Indicate the schedule is subject to change with fair notice and how the notice will be made available.*

### ART4940 / 3D Animation, Fall Semester 2017, Course Schedule

**Table 1 Course Schedule**

Week	Date	Topics, Readings, Assignments, Deadlines
1	08.22.17	<p>Class 1:</p> <ul style="list-style-type: none"> <li>• Overview of the 12 Principles of animation.</li> <li>• Identifying the 12 Rules in both 2D and CG Animation</li> <li>• Understanding how the 12 rules affect and are incorporated in all kinds of animation styles.</li> <li>• Introduction to Maya's Animation Tools</li> <li>• Introduction to the Graph Editor</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Identifying and Matching Animation Styles and the Principles of Animation found in them.</p> <p><b>HOMEWORK:</b> Experiment with Animation tools in the "Give a cube personality" assignment.</p>
2	08.29.17	<p>Class 2 : Understanding Maya's Animation Tools and Animation Pipeline</p> <ul style="list-style-type: none"> <li>• Critique of "Free Flow" Assignments</li> <li>• Working with Stepped, Linear and Smooth Keys</li> <li>• Learning to Block Animation with Stepped Keys</li> <li>• Converting Stepped keys to Interpolated Keys</li> <li>• Working with the Bouncing Ball Example</li> </ul> <p>Using previously learn techniques in combination with animation deformer we will animate a bouncing ball three different ways;</p> <ol style="list-style-type: none"> <li>1. Squishy</li> <li>2. Light</li> <li>3. Heavy</li> </ol> <p><b>IN CLASS ASSIGNMENT:</b> Animate a bouncing squishy and a light bouncing ball.</p> <p><b>HOMEWORK:</b> Animate a Tennis Ball and Ping Pong bouncing ball.</p>

Week	Date	Topics, Readings, Assignments, Deadlines
3	09.05.17	<p>Class 3 : Introduction to Acting in Animation</p> <ul style="list-style-type: none"> <li>• Critique of Bouncing Ball Assignments</li> <li>• How Emotion is Conveyed in Animation</li> <li>• How Emotion is Conveyed without a Face</li> <li>• A Study of the "Sack of Flour"</li> <li>• Learning to work with a "Rig"</li> <li>• Learning the Flour Sack Rig</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Animate the Flour Sack Rig in two different in class scenarios.</p> <p><b>HOMEWORK:</b> Create Three Flour Sack Animations, each to express a different emotion.</p>
4	09.12.17	<p>Class 4: Working with Weight in Animation</p> <ul style="list-style-type: none"> <li>• Critique of Flour Sack Assignments</li> <li>• A look at how weight is simulated in animation.</li> <li>• Simulating a "Pushing" Effect with the Flour Sack</li> <li>• Simulating a "Pulling" Effect with the Flour Sack</li> <li>• Simulating a "Lifting" Effect with the Flour Sack</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Block out 5 - 10 seconds of key poses for three Flour Sack Animations incorporating Pushing, Pulling and Lifting.</p> <p><b>HOMEWORK:</b> Create and refine the interpolated keys for the Flour Sack Animations.</p>
5	09.19.17	<p>Class 5: Introduction to Full Character Rigs</p> <ul style="list-style-type: none"> <li>• Critique of Flour Sack Weight Assignments</li> <li>• An In-Depth Look at the Average Male Rig</li> <li>• An In-Depth Look at the Large Character Rig</li> <li>• An In-Depth Look at the Small Character Rig</li> <li>• A Look at Maya's Character Animation Management Tools</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Blocking out a quick Stepped Character Animation based on Existing Footage</p> <p><b>HOMEWORK:</b> Animate in-betweens and finish assignment.</p>

Week	Date	Topics, Readings, Assignments, Deadlines
6	09.26.17	<p>Class 6: The Human Walk Cycle</p> <p>Critique of Stepped Character Assignments</p> <p>A Look at creating and analyzing several walk cycles:</p> <ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> <li>• Small</li> <li>• Large</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Blocking out a walk cycle that matches a rigged characters body size and style.</p> <p><b>HOMEWORK:</b> Created splined and interpolated keys to refine and finish walk cycle assignment.</p>
7	10.03.17	<p>Class 7: The Human Walk Cycle</p> <p>Critique of Walk Cycle Character Assignments</p> <p>A Look at creating and analyzing several "Expressive" walk cycles:</p> <ul style="list-style-type: none"> <li>• Happy/Excited Walks</li> <li>• Sad/Depressed Walk</li> <li>• Cautious/Frightened Walk</li> <li>• Differences between walks and runs</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Blocking out a walk cycle that matches a rigged characters body size and style as well as expresses a very specific mental state (Happy, Sad, Depressed, Scared, Etc...).</p> <p><b>HOMEWORK:</b> Created splined and interpolated keys to refine and finish expressive walk cycle assignment. Prepare for Midterm Review</p>
8	10.10.17	<p><b>CLASS 8: MID TERM REVIEW</b></p> <p>You will be required to present all work so far as a showreel in a group crit as preparation for the final. You will be given notes on your work and an indicative grade.</p> <p>An In class Midterm assignment will also be assigned. Assignment must be completed during class time.</p> <p><b>HOMEWORK:</b> Address notes on work so far</p>

Week	Date	Topics, Readings, Assignments, Deadlines
9	10.17.17	<p>Class 9: Introduction to Animating Hands and Body Language</p> <ul style="list-style-type: none"> <li>• Analyzing how acting is incorporated in different types of animated characters</li> <li>• Combining, walk, weight, and acting in animation.</li> <li>• Emphasis on Animating expressive Character Hands</li> <li>• Creating and telling a narrative with body and hand language only.</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Block out animation that tells a story only using a character's body language.</p> <p><b>HOMEWORK:</b> Create interpolated and refined animation of in-class body language assignment</p>
10	10.24.17	<p>Class 10: Introduction to Facial Animation</p> <ul style="list-style-type: none"> <li>• Critique of Body Language Assignments</li> <li>• Overview of How Facial Rigs work</li> <li>• Working with Blendshapes vs. Joint Facial Setups</li> <li>• Understating Phonemes and Visemes</li> <li>• Learning to Block out Lip Sync to an Audio Clip</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Choose a provided audio clip and begin setting up basic blocked keys for face/head animation and expressions.</p> <p><b>HOMEWORK:</b> Create Stepped Keys for Lip Sync</p>
11	10.31.17	<p>Class 11: Facial Animation Continued</p> <ul style="list-style-type: none"> <li>• Critique of Rough Stepped Facial Animation</li> <li>• Learning to create Expressive Facial Animation</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Work on Facial Animation/Lip Sync Assignment by creating interpolated and refined key frames.</p> <p><b>HOMEWORK:</b> Complete Facial Animation/Lip Sync Assignment by creating interpolated and refined key frames.</p>
12	11.07.17	<p>Class 12: Introduction to Final Animation Project</p> <ul style="list-style-type: none"> <li>• Critique of Completed Facial Animation</li> <li>• Overview of Final Animation Project</li> <li>• Storyboarding for more Intricate Animated Sequences</li> <li>• Creating Animatics for Intricate Animated Sequences.</li> </ul> <p><b>HOMEWORK:</b> Create two potential storyboards and animatics for final project final idea.</p>

Week	Date	Topics, Readings, Assignments, Deadlines
13	11.14.17	<p>Class 13: Created Blocked Animation for Final Project</p> <ul style="list-style-type: none"> <li>• Critique of Storyboards and Animatics</li> <li>• Selecting and Refining Animatic</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Work on final animations by beginning with created blocked animation to matching animatic timing</p> <p><b>HOMEWORK:</b> Complete blocked animation to match animatic timing</p>
14	11.21.17	<p>Class 14: Refining Large Body Motions and Movements for Final Animations</p> <ul style="list-style-type: none"> <li>• Critique of Rough Stepped Final Animations</li> <li>• Begin refinements of Large scale body movements</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Work on final animations in class.</p> <p><b>HOMEWORK:</b> Complete refining of large scale body movements for final animation.</p>
15	11.28.17	<p>Class 15: Refining Secondary Motions and Facial Animation</p> <ul style="list-style-type: none"> <li>• Critique of Final Animation Progress</li> <li>• Continue refinements of Final Animation</li> </ul> <p><b>IN CLASS ASSIGNMENT:</b> Work on final animations in class.</p> <p><b>HOMEWORK:</b> Complete Final Animations for Presentation</p>
16	12.05.17	<p>Class 16: Presentation and Critique of Final Animation Project</p> <p>Final show - Reel presentation and critique. Show-reel should include the following assignments;</p> <ul style="list-style-type: none"> <li>• Bouncing Balls</li> <li>• Flour Sack Animations</li> <li>• Character Free Form</li> <li>• Character Walks</li> <li>• Character Facial Animation</li> <li>• Final Animation</li> </ul>