1. Course Description

This class will introduce students to basic concepts and practices currently used in the field of 3D computer animation. Today, 3D Computer animation is a very dynamic and heavily interdisciplinary field, involving fine arts, science, mathematics, physics, acting and animation. In this class, we will focus our attention on how to create believable movement by applying the traditional principles of animation to the 3D digital environment and using the computer as a tool to animate.

2. Course Supplies

- A USB flash drive or external drive for storing DATA; (8 GB recommended)

- Sketch book and pencils for drawing.

- 3 to 5 Sheets of transparencies and dry eraser (2 different colors)

- The latest version of Maya is available in all computers in the animation lab on campus.

- You will be required to shoot video reference for some of the assignments. Please be prepared to do so, making sure you have some kind of device to record video. This device could be a mini-Dv cam, a webcam or a digital camera that can shoot video. If you don't have one, think of someone that can help you with shooting video reference for class. A FLIP cam is recommended (relatively cheap, easy to operate and very portable!).

- You will need the ability to perform a simple film editing on your shots. I recommend a software called Quicktime Pro (available for PCs or Macs, the price is $29.99 in the apple store site. To purchase your copy, go to http://www.apple.com/quicktime/pro/). Quicktime pro is also available (free) in all computers of our lab.
3. Required Books

**The Illusion of Life: Disney Animation**  
By Ollie Johnston and Fran Thomas  
Published by Disney Editions  
ISBN-10: 0786860707  

**The Animator's Survival kit**  
By Richard Williams  
Published by Faber and Faber  
ISBN 0-571-20228-4  
ISBN 0-571-21268-9

**How to Cheat in Maya 2015**  
By Kenny Roy  
Published by Focal Press  
ISBN-13 978-0415826594  
ISBN-10 0415826594

4. Online Resources

http://area.autodesk.com/  
http://www.creativecrash.com

http://cgchar-animation.com  
http://cgtalk.com

http://www.jrawebinar.com/  
http://www.jasonryananimation.com/

http://www.animationtipsandtricks.com/

We also have an online group. Membership in the online group is mandatory for this class – we will use the group for announcements, to post files and handouts. Please make sure you become a member. The Url will be given in class.

5. Course Requirements

There will be weekly assignments and required readings. Students should complete the weekly assignments and have them assembled as a demo reel at the end of the semester. Chosen assignments and demo reel will be graded, as well as participation in class.
Students are expected to complete and hand in every assignment for the course. Deadline for assignments will be strictly observed. STUDENTS ARE RESPONSIBLE FOR KEEPING A DIGITAL COPY OF ALL SCENES AND ASSIGNMENTS. PLEASE BACKUP YOUR WORK OFTEN.

6. Attendance

Students are expected to attend class regularly. Lateness of over 15 minutes counts as an absence (unless arrangements have been made prior). Students with 3 or more consecutive non-justified absences will most likely fail the class – in three weeks we will cover a lot of ground and if you miss three consecutive weeks of classes it will be really hard to catch up later. Please send me an email (preferably in advance) if you are unable to attend class.

7. Grading breakdown

10% = Heavy and Light bouncing balls …………………………………………Due Sept 30th
5% = Pendulum Across …………………………………………………………..Due Oct 7th
5% = Arm Study …………………………………………………………………..Due Oct 26th
20% = Ball with Tail or Squirrel ……………………………………………………Due Oct 26th
20% = Basic Walk cycle section …………………………………………………..Due Nov 16th
30% = Personality walk ……………………………………………………………Due Day of Final
5% = Final Demo Real ………………………………………………………………..Due Day of Final
5% = Participation and overall engagement with course material

**Please note:
The grades for the assignments above will be given on due date of each assignment as an indication of the quality of work. Extra credit can be earned depending on the quality of the assignments that are in your demo reel.

Grades will reflect a student's overall engagement with the course material from throughout the term, as determined by factors such as completion of all assignments, the quality of assignment work, class participation, progress and effort. Students are responsible for maintaining an updated record of all completed assignments.

OBS: I will only give out an Incomplete if you have or are experiencing a compelling family emergency and/or life crisis. If you receive an “incomplete” you have to complete the work on your own and have one year to submit all final materials for consideration or your grade reverts to an F (Fail).

Grading Percentage Breakdown
94% and above = A
93% - 90% = A-
89% - 87% = B+
86% - 84% = B
83% - 80% = B-
79% - 77% = C+
76% - 74% = C
73% - 70% = C-
69% - 67% = D+
66% - 64% = D
63% - 60% = D-
below 60% = F
Please note:
A = Excellent or Superior; or top 10% (93 to 100) = 4.0
B = Above Average; or second 10% (83-92) = 3.0
C = Average; or third 10% (77-82) = 2.0
D = Below average, minimum passing grade (69-76); or fourth 10% = 1.00
F = Failure or Exceptionally Poor; or bottom 60% (0-68) = 0.00

8. Course and Lab rules

Failure to comply with the following rules will result in a one week or full semester's expulsion from the lab.

1. Food is prohibited (Full semester expulsion)
2. Beverages may be kept only on the shelf in the rear of the lab
3. Only students registered in digital classes or BFA are allowed in the lab
4. No internet browsing is allowed during class time. That includes social network sites, any kind of chat or instant messages, news, youtube or any other site at all. Students caught browsing the internet during class will be promptly removed from the lab and or have to sing a song to the class.
5. A notebook and taking notes is mandatory during all lectures or when teacher is explaining a topic or giving assignment guidelines.
6. The lab is for digital class related work only (No painting, charcoal rendering, sculpting, massaging, etc...)
7. No inappropriate imagery on the computers nor dry erase board
8. Headphones only; no sounds audible to other students allowed
9. Do not disconnect, attach, rearrange, or install anything on the computer systems (USB and external drives are permitted)
10. The lab doors must remain closed and locked at all times - do not prop the door open!
11. Cell phones should be turned on silent

9. Students with Disabilities

Individuals with disabilities may contact the Disability Resource Center on campus, 924.6000, Administration Building 110, for a variety of formats such as Braille, large print, sign interpreters, assistive listening devices, audio, and accommodations for physical accessibility. If you need course adaptations or accommodations because of a disability, or if you need 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 DRC to establish a record of their disability.

10. Plagiarism and Academic Integrity

Any student submitting stolen, copied, or plagiarized work will fail the course and face severe disciplinary actions from the university.
Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at <http://www2.sjsu.edu/senate/S04-12.pdf>. SJSU faculty is required to report all violations of the academic integrity policy to the office of student conduct and ethical development. All students are responsible for knowing and abiding by the university policies regarding academic integrity, which can be found at www.sa.sjsu.edu/student_conduct
11. Access to the lab

The lab is accessible to students every day of the week outside of class times, except in the times when there is a class there. The current class schedule is posted at the front door of the lab.

For building access, students can use their tower id cards with the omnilock on the back side of the building near the parking lot. The classroom also has a omnilock. If students are in the class after 10 pm on the weekdays and over the weekends, they will need an after hours pass. After hour passes will be distributed by me.

12. Weekly Schedule

IMPORTANT NOTE: This schedule is subject to changes. This is the initial plan, but assignments can change due to guest visitors, school events and overall learning process of students enrolled in the class.

INTRODUCTION AND INTERFACE

1. INTRODUCTION AND INTERFACE OVERVIEW – August 24th and 26th

Introduction To ART 051 Intro to 3D Animation.

TOPICS: Establishing work routines; Overview of Maya Interface; Playing with shapes, colors, scaling and moving things around; timing and spacing.

IN CLASS ASSIGNMENT: Slow in and slow out with simple geometric shapes (translation and rotation) in class assignment
HW: film reference of rolling and bouncing ball(in place and across). Read Handout/ books, keep working on shape exercise

BOUNCING BALL SECTION

2. ANIMATION INTERFACE, ROLLING/BOUNCING BALLS– August 31st and 2nd

TOPICS: Graphic Editor and Dope sheet; Planning for Animation; Weight, gravity, speed, timing and spacing in animation; Curves and tangents in the graph editor: spline, flat, stepped, linear
ASSIGNMENTS:
1. Rolling ball across screen
2. Ball bouncing in place (no squash and stretch)
3. Ball bouncing across the screen (no squash and stretch) 3
4. Plan out animation for ball bounce across screen with squash and stretch. MUCH HAVE TIMING AND ROUGH SPACING

3. BOUNCING BALL – 01  - September 7th (no class on 7th) and 9th

TOPICS: Drawing/Planning for computer Animation; How to use the transparencies and the "train tracks"; Weight, timing, Spacing, Arcs, Easy ins and Easy outs.
HW/ ASSIGNMENT: Start and get as far as possible on ball bound with Squash and Stretch. Also refine ball bounces from last week and roll.
BOUNCING BALL SECTION

4. BOUNCING BALL – 01 - September 14th and 16th
TOPICS: Weight, Timing, Spacing, Squash and Stretch, arcs, ease in and out for difference weights, Heavy and Light Ball Bounces

ASSIGNMENTS:
1. Refine/Fix last week’s Bouncing Ball Assignment -
2. Animate two bouncing balls, making sure you show the difference of weight/mass in between them: one ball should be very heavy and the other one very light. They both should bounce across the screen, and they both should have squash and stretch. Please shoot video ref and plan for this assignment on paper before animating on the computer!
For grades, please bring your video reference, a JPEG image showing your planning thumbnails, a quicktime with your final assignment.
* Video Reference and planning due September 21st
* Final Heavy and Light Ball Bounce Due September 30th

5. BOUNCING BALLS CONTINUED– 02 - September 21rd and 23rd
Go over more in depth about timing and spacing and refining ball assignments

BALL BOUNCE FINISH/ OVERLAPPING ACTION SECTION

6. OVERLAPPING ACTION - 01 – September 28th 30th
TOPICS: Overlapping action, arcs, timing, space, how to manage the graph editor

ASSIGNMENT:
Animating a swing:
1. in place swing and separate one with sideways translation of the base and swing (driving force) *Due October 7
* This Heavy and light bouncing ball due 9/30 and will be graded (20% of your total grades)

7. OVERLAPPING ACTION - 02 – October 5th and 7th
TOPICS: More on overlapping action - pose to pose, and straight ahead animation
driving force, and its effect on the overlapping action
copying and pasting key frames in graph editor and on the timeline

ASSIGNMENT:
Applied overlapping action: Arm Studies – first pass
Planning for Ball with tale/squirrel Assignment
* The final version of your in place and sideways translation pendulum assignment will be graded and is Due Oct 7th
(5% of your total grades)

8. OVERLAPPING ACTION – 03 - October 12th and 14th
ASSIGNMENT:
Applied overlapping action: Arm Studies – redo or refining
Animate the Ball with tail or Squirrel combining squash/ stretch and overlapping action.
* Both Due on October 26th
**BASIC WALK CYCLE**

9. FINISH OVERLAPPING ACTION/ START BASIC WALK (BLOCKING LOWER BODY) -
   – October 19th and 21st-  
**TOPICS:** Walks Part 1  
Please note ** Finished Basic Walk is Due Nov 16th

A simple Walk (lower body)
steps to create animation: research, planning, blocking, animation, final touches.
Key poses for a walk, mechanics of walk
Transfer of weight during a walk, balance
Planning for Walk  
**ASSIGNMENT:**
Block Walk Cycle - stepped mode - legs only.

10. BASIC WALK (ADDING DETAIL TO LOWER BODY) - 02 - October 26th- 28th  
* **TOPICS:**
   Mechanics of walk, hip motion, overlapping action for the arms  
**ASSIGNMENT:**
1. Refining legs on your Walk Cycle  
   arcs in walks.
The final version of your arm study (5% of you total grade) and ball with tail assignment (10% of your total grades) will be graded Due Oct 26th

* 11. BASIC WALK (ADDING ANIMATION ON SPINE, HEAD AND ARMS) - 03 - November 2nd and 4th  
**TOPICS:** Upper body animation on a walk.
**ASSIGNMENT:**
Adding animation on spine, neck and head
Adding the arms to the walk
Posing the hands, making sure they look relaxed
Taking the overlap all the way to the fingers

12. REFINING BASIC WALK - 04 - November 9th and 11th  
**ASSIGNMENT**
1. Based on feedback, refine and polish your basic walk cycle animation
* 2. Lecture on basic polishing
3. Starting on New Topic: Walk with personality
   Video reference and planning thumbnails for “Personality Walk” assignment
PERSONALITY WALK

13. PERSONALITY WALK 01 - November 16th and 18th
What gives a walk personality
Block lower body for personality walk
Basic Walk Due
* The final version of your basic walk assignment will be graded Due Nov 16th (20% of your total grades)
* The final version of your personality walk will be due on the Day of your Final (30% of your total grades)

14. PERSONALITY WALK 02/ LIGHTING LECTURE/ RENDERING OUT SHOTS - November 23rd and 25th
Character Walks
How to Light your Animation
How to Render your Animation shot
Address notes on the first pass of your entire body blocking. Refining blocking before polish

15. WALKS SECTION/PERSONALITY WALK 03 - DEMO REEL GUIDELINE – November 30th, Dec 2nd, and 7th
TOPICS:
Preparing your final Class Reel for the class
Simple editing using Quicktime pro
Adding Slates and sound
ASSIGNMENT:
Smooth out animation (take it out of blocking)
Addressing any notes given
Keep working on your “Personality Walk”
Prepare your final class reel

Class Reel should have the following (5% of total Grade):
Title Card
Rolling Ball/Bouncing ball
Heavy and light Bouncing Ball
Pendulum, stand still swing, translations with swing
Overlapping Arm
Ball with Tail
Basic Walk
Personality walk
End Card

***Demo Reel with all Assignments Due on the Day your classes final. Please refer to schedule below

FINALS
FINAL EXAM DATES
51B-01 1530 Class Tuesday, December 15th 1445-1700
51B-02 1230 Class Monday, December 14th 1215-1430

Final Demo Reel Due (please see note at the bottom of the syllabus)
“Walk with Character” Assignment due (30% or your final grades)
Watch all the work on the big screen and party!