San José State University
Animation/Illustration – Department of Design
ANI 128a Digital Animation

Course and Contact Information

Instructor:	Michelle Meeker
Office Location:	ART 213
Telephone:	Email only please
Email:	Michelle.Meeker@sjsu.edu
Office Hours:	Mon and Weds 6:20 to 6:50pm by appt
Class Days/Time:	Mon 3pm to 5:50pm
Classroom:	ART 224 (Mac Lab)
Prerequisites:	ANI 51b

Course Format

Important Web Pages and Class Messaging

ANI Program Google group (mandatory for ANI students): www.shmgoogle.com
https://ani128a.wordpress.com/
Assignments, announcements, files and grades will be posted on Canvas
Assignments should be uploaded weekly on Syncsketch.com

Course Description

In this class we will focus our attention on how to create believable movement by applying the traditional
principles of animation to 3D digital characters, focusing on body mechanics. There is also special emphasis on the
building blocks of an animated scene, and the work flow from planning phase to final animation, with focus on
shot design and blocking. The project assignments will be introduced through hands-on demos and lectures, and
will be completed by work done in class and continued at home. Short films and scenes of feature animated and
live action feature film will be used to illustrate the many concepts studied in this class.

Course Learning Outcomes (CLO)

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

CLO#1: Utilize the correct process for build a shot using correct techniques for planning, blocking and polishing
CLO#2: Be able to block a shot using stepped and/or copied pairs techniques
CLO#3: Animate broad action with solid body mechanics, appropriate for a intermediate level

CLO#4: Apply the traditional principles of animation to produce believable movement

Required Texts/Readings
The Animator's Survival kit
By Richard Williams
Published by Faber and Faber ISBN 0-571-20228-4

Cartoon Character Animation with Maya
by Keith Osborn ISBN: 9781474238588

Quick Sketching with Ron Husband
by Ron Husband ISBN: 9780415823340

Suggested additional text:
Animation: The Mechanics of Motion by Chris Webster

Other technology requirements / equipment / material

3D CHARACTERS:
Body Mechanics mega pack:
https://gumroad.com/l/xhRK#

Sony Zombie Rig:
https://secure.sonypictures.com/animation/hotelt/zombierig/videosubmissions/

Pink Panter:
Rig http://www.cgmeetup.net/home/pink-panther-rig-free-maya-rig-3d-character-rig/

Mr. Buttons: https://www.bloomsbury.com/cw/cartoon-character-animation-with-maya/student-resources/
mr-buttons/
https://gumroad.com/l/xhRK#

ELECTRONICS AND SOFTWARE:
- A USB flash drive or external drive for storing DATA and transporting files to and from school;
Please do not work directly from your external drive when you are in computer lab. Copy your files locally and use
the lab's computers. When you are done, copy your work back to your external drive for storage and transport.
- We will be using Maya 2018 and Maya 2018. This version is available in all computers in the lab. If you need
your own copy please make sure to download Maya 2016 or 2018 (not 2017). Downloading is free for SJSU
students on the Autodesk site.
- You will be required to shoot video reference at 24fps for some of the assignments. Please be prepared to do so,
making sure you have some kind of device to record video (smart phone, video camera, flip camera etc).Download
Filmic Pro (or similar) for your smart phone. This software will allow you to shoot video at

24fps which is the frame
rate required for this class. https://itunes.apple.com/us/app/filmic-pro/id436577167?mt=8
- As part of the SJSU Animation/Illustration program, in this class, as well as every other, it is expected that you
possess the Adobe Creative Suite and will utilize it at some point in executing your projects for this class. It should
be installed on your laptop along with the Microsoft Office Suite. http://its.sjsu.edu/services/software/

ART SUPPLIES:
• Sketch book and pencils for drawing.
• 2 colors of dry erase markers

Course Requirements and Assignments

"Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus."

Final Examination or Evaluation

A final project will be required for this course.The final project will consist of a class demo (quicktime movie) with a compilation of the final version of all assignments produced during the course.

Grading Information

Specific Assignments and instructions will be given in class. There will be weekly

assignments, readings and critique of student work. Some assignments may require group work. Presence in class is essential since most projects will be collaborative and require presence in class for group meetings, reviews, critiques and discussions.
Projects: Students will complete a series of small assignments, and one major collaborative design project. Each will require the student to respond to a proposed narrative (text, story idea, or storyboards) with a prescribed combination of visual research, supporting organizational assets (spreadsheets, plans) and original artwork (storyboards, designs) Guidelines, techniques, strategies and further details will be provided by instructor. The major design project will serve as the course final.

Grade will be determined following this formula:

Participation: 10%
Step or Turn around project: 10%
Jump: 10%
Throw 20%
Weight: 20%
Final Reel 30%

Determination of Grades

A grades indicate excellent work.
B grades indicate above average work.
C grades indicate average work.

D grades indicate below average work.
F grades are failing.

A plus = 100% to 97%
A = 96% to 93%
A minus = 92% to 90%
B plus = 89% to 87%
B = 86% to 83%
B minus = 82% to 80%
C plus = 79% to 77%
C = 76% to 73%
C minus = 72% to 70%
D plus = 69% to 67%
D = 66% to 63%
D minus = 62% to 60%
F = 59% to 0%

Classroom Protocol

Animation/Illustration Program Policies

Students must arrive to class on time with materials ready to work.
Cell phones must be silenced.
Private conversations during lectures and class discussions are not permitted.
No checking email or using laptops for activities unrelated to the class.
No playing personal audio through speakers, use headphones only.
Do not prop open any doors.
Do not leave valuable items unattended.
Do not leave the classroom without cleaning your area.
Be courteous to others, keep private conversations quiet.
Aromatic foods are not allowed in any of the classrooms or labs.
Please be attentive to your personal hygiene.

Computer Labs: Violation of rules will result in loss of lab access for the whole semester

No food or beverages by the workstations.
Do not change the connections on the equipment.
Do not move any equipment in the lab.
No traditional painting.

University Policies

Per University Policy S16-9 *(http://www.sjsu.edu/senate/docs/S16-9.pdf)*, relevant information to all courses, such as academic integrity, accommodations, dropping and

adding, consent for recording of class, etc. is available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/

ANI 128a Digital Animation I
Spring 2019

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1		Introduction to course. Explanation of the four types of assignments: Pose, Shot pick apart, quick studies and sketchbook drawings; QUICK STUDY: Let's do a little refresher on how to use the Graph editor? Study the two tutorials from Victor Navone, Splinophylia I and II There's a link for his tutorials in our resources site, under Technical Stuff: https://ani128a.wordpress.com/2015/09/10/let-victor-navone-help-you-with-the-graph-editor/
1		SHOT PICK APART: Select and get 3 feature films (3D animation) and copy them to your computer, in preparation for shot pickapart. POSES: Look for videos and reference of Magicians Use your sketch book to sketch some cool poses for a Magician Create a great pose for a magician character Think of a very expressive pose that conveys something about the character (pride or defeat, for example), or that clearly shows a story moment.
2		POSE (due in week 3): A character standing up, maybe waiting for the bus. SHOT PICK APART (due in week 3) find a scene that you think it's a good example of a shot with clear holds and transitions
2		QUICK STUDY: Change the timing in the magician scene given in class. SCENE ASSIGNMENT: Magician touching the hat with his wand... trying to make something appear?
3		1. Read the whole section "Center of Gravity, Weight Shifts and Balance" section of the Class Guide; SHOT PICK APART Select a scene in which a character is OFF BALANCE. Bring the scene to class to share with your classmates POSE After reading the Class Guide section on Balance, create one pose inspired by everything you read. The idea of the pose is "balance". Think of the COG and the support of the weight, and make sure your pose has a great line of action, is asymmetrical, expressive, appealing and yet completely in balance.

3 QUICK STUDY

Shoot video reference with a close up of your feet going from tool to heel etc. Animate a close up of the feet
showing the flexibility and exploring the controls to move the different parts of the feet (heel, toe, ball of the feet)

SCENE ASSIGNMENT (due in week 4):

A Big Step to the side, or a 180 degrees turn.

(Max 120 frames)

4 SHOT PICK APART

Moving holds. Selected a scene from a movie in which the character is barely moving at all, and still we know it is alive. What is moving? How much? What is the effect? What do you think the animators did in order to achieve thiseffect?

POSE

Balance. Think of situations/professions/characters that defy balance and create a balanced pose based on that. For example circus artists, dancers, etc...

4**Graded Assignment:**

Finish you Heavy and Light assignments for grades. Polish your animation and create a clean playblast for presentation. Submit your final scene via Syncsketch. QUICK STUDY

Choose one of your poses in the previous poses assignments and turn it into a moving hold – that is, keep the character alive by animate very limited/little movements but keeping him/her in the same pose the whole time.

SCENE ASSIGNMENT (due in week 5):

Polish your Step or Turn Around assignment. Make sure to keep your first and last holds alive, turning them into a moving hold. Add arcs and overlapping action to the transitions. Loosen up the character and bring it to life. This is
the final polishing pass on your Step or Turn Around assignment. Final shot due next week. Please light your shots and use shadow.

5 SHOT PICK APART

Jumps! Find a scene in which someone is jumping. Analyze the poses. Is there an anticipation pose? How long does the char holds the antic pose? How contrasting is the anticipation to the throw pose? What happens to the weight? Are there any weight shifts? How long the character spends in the apex? Is there a slow down there? Does the character uses his/her arms to propulse the body forward? Sketch the main poses, mark the line of action, and count
frames of the main holds and transitions.

POSE

Jumping. Create a pose of someone jumping – it can be the anticipation before the jump, the apex moment, or the impact on landing. Use your imagination -we want a pose that is pushed and appealing!

5SCENE ASSIGNMENT (due in week 5):

Make the jump scene that you just blocked yours. Modify some of the poses, modify the timing, make it more interesting. If you want, add a set, a background image or props to the scene.

6SHOT PICK APART

Throwing! Find a scene in which someone is throwing a heavy object at someone else, or at a wall etc. Analyze the poses. Is there an anticipation pose? How long does the char holds the antic pose? How contrasting is the anticipation to the throw pose? What happens to the weight? Are there any weight shifts? Sketch the main poses, mark the line of action, and count frames of the main holds and transitions.

POSE

Throwing. Someone throwing something. How heavy or light is the object? Make sure you give a hint of the weight of the object in the pose. Pick the moment when the object is just leaving the hand of the character. Throwing hard is preferable, we want a pose that is pushed and appealing!

6QUICK STUDY

Spine flexibility. Work on the overlapping of the spine when your character moves to the side no need to animate feet, please frame your character from the waist up. The COG should be driving the movement, and the rest of the spine overlaps (including neck and head). You can make the spine more "rubbery" or less, but make sure to animate so that the spine seems to be FLEXIBLE.
SCENE ASSIGNMENT (due in week 5):
Jump Shot: FINAL, please present it rendered with shadows

7POSE

Work on a pose that shows a great anticipation pose before a throw
SHOT PICK APART
Find a shot that has a great anticipation pose before a strong action

7QUICK STUDY

Read about constraints in the class guide.What's the difference between constraints and parenting?
Try the tutorial on constraints on the resources site
https://ani128a.wordpress.com/2015/09/29/constraints/
SCENE ASSIGNMENT:
THROW (max 120 frames)
Someone throwing something. Think of a character and a context for your scene. Who is the character? Why he/she is throwing something? What is the situation and mood? Show complete planning (video ref + planning on paper) and BLOCKING

8 POSES

2 hands poses showing a closeup of the hands of the character only
SHOT PICK APART
Select a shot in which hands have an important role, or in which the hands are well animated. How the fingers move? Is there a finger that leads ahead of the others or all of them move at the same time? Do the palm bend?

8 QUICK STUDY

Hand poses. Close up animation of a hand grabing a rock. Make sure the fingers wrap nicely about the rock, and make sure you are not animating all fingers moving at the same time. Shoot reference and check how exactly we grab things, and how exactly our fingers and palms move.
SCENE ASSIGNMENT:
Address notes on blocking and start a nice polishing pass

9POSE:

Create a pose in which a character is carrying something very heavy. How the weight of the object affects the COG of the body? What can you do in the pose to show us how heavy the object is? Make sure the hands are well posed! Also, pay attention to the eye line.
SHOT PICK APART
Select a shot in which the eye line is interesting, in which the eye line helps the story or helps the viewer understand the character's emotions.

9 QUICK STUDY

Thoughts precede action. And where we look is important to show thought process... Also, the way we animate eyes is very different than the way we animate other body parts. We usually move our eyes really fast between one position and the next. In this quick study, animate a close up of the eyes moving towards 3 different directions. First it will look to point A, then will look at point B and then will look at point C. Each time the eyes look at something
they have to hold still (we need that to focus). But the movement between each point should be really fast. How fast? Try different timings and see what works best. Also, to avoid repetition, use different timings for each hold, and vary slightly the timing of the eye line change.
SCENE ASSIGNMENT:
THROW: FINAL, please present it rendered with shadows

10POSE:

none SHOT PICK APART Select a shot in which the character is carrying or dragging or pushing something really heavy! Analyse the poses and the timing. What are the elements (pose, timing, line of action, COG etc) that create the illusion of WEIGHT?

10QUICK STUDY:

IK and FK. What is the difference? Animate two characters in the same scene, dropping their arm from a top position (arms straight up, then dropping down). An example of that action can be found on page 233 of Richard William's book: last example of the page. The first character has FK arms, and the second has IK arms. SCENE ASSIGNMENT : WEIGHT, Someone carrying, dragging or pushing a huge rock. Rocks are available in the library of Assets. Please show a complete Planning. If you are planning to animate someone carrying a rock, please think about what is the constraint setup you will use it, and make it part of your planning. If you are animating a character pushing a rock, make sure to use IK hands. Dragging may work with IK or constraints, depending on your scene.. so make sure to think about your setup. BLOCK YOUR SCENE. A complete planning and blocking is due next week.

11Review

Blocking of weight scene		
11		Review first pass polishing SCENE ASSIGNMENT Dress up your scene! Add set elements or a backgroun image (painting preferable)
12Work on your scene. Work on your class reel.		
12Revision of all quick studies		
13Revision of poses		
13Prepare scenes for finals		
14Prepare scenes for finals		
14Prepare scenes for finals		
15Prepare scenes for finals		
15Prepare scenes for finals		
Final Exam		Please consult SJSU Final exams page