

2D Animation (Afternoon Class): Motion and Character

- Day 1 - Monday 7/17

- **UNIT 1a - “Frame Series” Animation Techniques**

- Intro to Adobe Animate
- Bounce a Ball with Inbetweening
- Float a Paper
 - Motion path guide layer
 - Volume and inbetweening on top layer

- Day 2 - Tuesday 7/18

- **UNIT 1b - Frame Series Animation & Character Design**

- Dog Run
 - Character Design Lecture
 - *Using Line of action with inbetweening*

- Day 3 - Wednesday 7/19

- **UNIT 1c - Frame Series Animation & Quick Volumetric Drawing**

- Add rough volume on top layer - finish the dog running exercise!
- Introduce character prompts for homework

- Day 4 - Thursday 7/20

- **UNIT 2 - “Ink & Paint” Character Illustration Techniques**

- Design a character starting from the context prompts
 - Imagine & embody character
 - Illustrate the **portrait** with this process:
 - *Line of Action, Rough Volume, Ink and Paint*
 - Learn Ink and paint tools in Adobe Animate
 - Graphic art vs object mode
 - Stroke vs fill tools

- Day 5 - Friday 7/21

- Illustrate the **profile** with the same process used for the portrait
- **UNIT 3 - Character Animation: Motion & Reference: Interpolation & Tweening**
 - “Keyframing” Animation Techniques (interpolation demo)
 - Homework! - choreograph and record reference motion
 - 2D & 3D distinction lecture - interpolation (2D) vs frame series (3D and metamorphosis)

- **Day 6 - Monday 7/24**

- **UNIT 3**

- Bounce a ball with “Tweening”
- Keyframed “Tweened” *walk-cycle using a template character project*
 - “Parenting” the parts in a “Forward-Kinematic” chain
 - Tweening rotation and position
- Import reference video into a new project

- **Day 7 - Tuesday 7/25**

- **UNIT 3**

- Use both 2D Interpolation & 3D Frame Series based on reference video
- Rebuild the character as “Symbols” for interpolation

- **Day 8 - Wednesday 7/26**

- **UNIT 3**

- Animation

- **Day 9 - Thursday 7/27**

- **UNIT 3**

- More Animation

- **Day 10 - Friday 7/28**

- **Finishing & Presenting!!!**

2D Animation (Morning Class): Motion and Composition

- Day 1 - Monday 7/17

- **UNIT 1a - Frame Series Animation: *Space, Time, Volume, Motion***

- Intro to Adobe Animate
 - Bounce a ball
 - *Inbetweening*
 - *Timing & Spacing*
 - *Squash & Stretch*
 - *Overlapping action*
- Homework: Watch 12 Principles Video

- Day 2 - Tuesday 7/18

- **UNIT 1b - Frame Series Animation: *More Volume, Ink & Paint***

- Spin a cube
 - Volumetric drawing with clean layer on top
- Floating Paper
 - Motion path guide layer under clean layer
- Metamorphosis Lecture & Screening
 - **HW: Draw a simple character for tomorrow!**

- Day 3 - Wednesday 7/19

- **UNIT 2 - Metamorphosis!**

- Translate character to a frame on Animate
- Exchange drawings in a class loop
- Plan metamorphosis
- Begin metamorphic animation

- Day 4 - Thursday 7/20

- **Metamorphosis** animation work day!

- Day 5 - Friday 7/21

- Finish and render **Metamorphosis!**

- **Day 6 - Monday 7/24**

- **UNIT 3a - Motion Design: Tweening**

- Bounce a ball with “Motion Tweening”
- Transform a shape with “Classic Tweening”
- Collecting Reference Video Field Trip - Cherry Creek
 - **HW: 3 More Video Clips of Liquid for Tomorrow!**

- **Day 7 - Tuesday 7/25**

- **UNIT 3b - Motion Design: Reference, Rotoscoping & Abstraction**

- *Screening: Abstract Animation - Repetition & Variation*
- Pendulum Stylus!
- Import Video: Find Abstraction
- Rotoscope with Tweening - Fill the Frame

- **Day 8 - Wednesday 7/26**

- **UNIT 3c - Motion Design Composition: Pattern, Repetition & Variation**

- Duplication & Transformation: Shape and Motion
- Repetition & Variation

- **Day 9 - Thursday 7/27**

- **Animation Studio**

- **Day 10 - Friday 7/28**

- **Finishing & Presenting!!!**

Mornings (9-12:15)				Afternoons (1:15-4:30)			
	Character Creation	3D Animation	2D Animation		Character Creation	Stop Motion Animation	2D Animation
Instructor	Jeremy Brown	Brett Rutland	Chris Pearce	Instructor	Jeremy Brown	Brett Rutland	Chris Pearce
TAs	Avery Buffington	Logan Schwartz Paulina Nunez	Alice Mach	TAs	Alice Mach	Logan Schwartz	Avery Buffington Paulina Nunez
1	Ruby Allen	Tim Frick	Jasper Acosta	1	Jasper Acosta	Will Kless	Sophie Wohl
2	Oliver Hesselberth	Montse Garduno Estrada	Flor Aguirre	2	Flor Aguirre	Toby de Barros-Rogez	Montse Garduno Estrada
3	Evan Lodico	Jack Hered	Jena Aguirre Garcia	3	Jena Aguirre Garcia	Nathan Shurden	Oliver Hesselberth
4	Miah Luna	Ash Lopez	Isabella Andrus	4	Isabella Andrus	Annika Sisson-Lundeen	Evan Lodico
5	Ad Nelson	Luke Marshall	Annika Sisson-Lundeen	5	Mo McConnell	Solange Cordova Santamaria	Ash Lopez
6	Grace Ramsour	Calvin Melton	Will Kless	6	Gwen Evans	Anna Wang	Miah Luna
7	Aisling Edgar	Lily Petrecca	Toby de Barros-Rogez	7	Tim Frick	Irfhan Moloo	Luke Marshall
8	Isabelle Bussinguer	Divine Nyiramugisha	Gwen Evans	8	Jack Hered	Cashis Parsons	Ad Nelson
9	Rhys Haney	Alli Tuma	Sofia Romero-Acosta	9	Calvin Melton	Sean Rodas	Lily Petrecca
10	Irfhan Moloo	Sophie Wohl	Nathan Shurden	10	Sofia Romero-Acosta	Alli Tuma	Grace Ramsour
11	Anna Wang	Alex Herrera	Harper Geygan	11	Harper Geygan	Hannah Dorrheim	Aisling Edgar
12	Maximo Ochoa	Celia Lafferty	Sophia Ortiz	12	Josiah Mmorosa	Ruby Allen	Celia Lafferty
13	Brandon Olivas	Josiah Mmorosa	Isis Kirby-Spitzig	13	Sophia Ortiz		Alex Herrera
14	Hannah Dorrheim	Lexi Romero	Eva Mark	14	Isis Kirby-Spitzig		Claire Therond
15	Charlie Howard	Solange Cordova Santamaria	Cashis Parsons	15	Eva Mark		Lexi Romero
16		Sean Rodas	Sof Akins	16	Sof Akins		Rhys Haney
17		Nate Geidt	Mo McConnell	17	Divine Nyiramugisha		Isabelle Bussinguer
18		Claire Therond	Micaela Delarosa	18	Juni Pater		Maximo Ochoa
19		Juni Pater		19	Isis Blake-Williams-Chernila		Brandon Olivas
20		Isis Blake-Williams-Chernila		20	Micaela Delarosa		Nate Geidt
21				21			Charlie Howard
22				22			
23				23			
24				24			
25				25			

2023 3D Character Creation Syllabus

7/17: Intro to 3D and Character Creation

- Presentation/Discussion: Character Appeal

What is a character and what makes characters appealing or otherwise successful? We will look at some examples of characters from film/TV and discuss what qualities are important for a good character. We will also discuss best-practices for character design and learn how to take first steps.

- Activity: Creating a Character Sheet

All characters begin with a design document called a character sheet. The character sheet consists of narrative description(s) of the character's story and motivations, the environments the character inhabits, and traits the character possesses. Character sheets also contain copious reference material from existing media that illustrate different aesthetic aspects of the character. *Gathering reference material is possibly the most important aspect of any creative endeavor!* Finally, character sheets consist of rough (no drawing/illustration skills required!) sketches of the character that will serve as a jumping off point for beginning to define the primary form of your character.

- Check-in: Character Sharing

Students will be encouraged to share their character design concepts with the rest of class. These daily check-ins will be a time for students to give and receive constructive feedback, and support each other.

7/18: Working With Geometry

- Check-in: Inspiration Sharing

At the beginning of each class, students will be asked to share an example of a fictional character from any medium that fits a particular prompt. These prompts may be things like "hero", "villain", "sci-fi", "funny", etc. Students will have an opportunity to choose the prompt for the next day. Following each student's brief presentation, the class will discuss how that character visually fits the prompt.

- Presentation/Discussion: Primary Forms

All 3D modeling begins with defining primary forms. We will begin by reviewing some basic geometric principles (vertices, edges, faces, and translation, rotation, scale). We will then apply those principles to the software by manipulating and molding primitive three-dimensional shapes into the primary and most basic forms of our characters. We will look at various examples of character silhouettes and break them down into primary and secondary forms.

- Activity: First Steps

Starting from primitive geometric forms (cube, sphere, cylinder, etc.), students will create a rough outline of their character in three dimensions. Primary forms define the silhouette of a character

in the broadest sense. For example, the relative size of the forehead, chin, and jaws are all aspects of primary form.

- Check-in: Character Sharing
-

7/19: Digital Sculpting

- Check-in: Inspiration Sharing
- Presentation/Discussion: Secondary Forms

Once primary forms are defined, secondary forms can begin to take shape. It is at this stage where students will learn to take their geometric models from a discreet and rigid 3D environment into a more fluid, creatively conducive sculpting environment. Though we must still be mindful of the geometry that is always present, the hard lines and edges begin to dissolve into smoother, more natural shapes. The tools we use to sculpt will also begin to feel more natural as they are designed to mimic the physical act of sculpting.

- Activity: Beginning a sculpt

Students, with the assistance of the instructor and TAs, take their character into a sculpting environment where they will begin to define secondary features. For example, cheek bones, nostrils, and eyebrows are all aspects of secondary form.

- Check-in: Character Sharing
-

7/20: Sculpting Details

- Check-in: Inspiration Sharing
- Presentation/Discussion: Tertiary Forms

Tertiary details are the last step in the sculpting process. Tertiary details, however, should not be confused with surface detail and texture. We will explore the difference as we begin to finish up the modeling portion of our character design process.

- Activity: Adding Detail

Students will continue to sculpt detail on to their characters. For example, large wrinkles, lips, and inner ear shapes are all aspects of tertiary form.

- Check-in: Character Sharing
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7/21: Texture Preparation

- Check-in: Inspiration Sharing
- Presentation/Discussion: Surface Properties

We will start to pivot from form and geometry to surface and texture. Building on our discussion of character appeal, we will discern how surface properties (color, tone, texture, etc.) affect character appeal.

- Activity: Revisiting Character Sheets

Though students can continue to work on their geometry, they will be encouraged to revisit and expand on their original character sheets to include more description, reference, and sketches relating to the surface properties of their characters.

- Check-in: Character Sharing
-

7/24: Intro to Materials

- Check-in: Inspiration Sharing
- Presentation/Discussion: Materials

We will learn how light and substance are simulated, and how we control that simulation to produce color, pattern, and texture on our 3D models. We will review some basic physics principles (reflection, energy conservation, etc.) and learn how they apply to our work.

- Activity: Beginning to Texture

Students, with the assistance of the instructor and TAs, take their character into a material painting environment where they will begin to define material and surface properties.

- Check-in: Character Sharing
-

7/25: Character Texture

- Check-in: Inspiration Sharing
- Presentation/Discussion: Refinement

Building from the previous class, we will explore more tools and techniques to further refine and polish our characters.

- Activity: Texture Refinement

Students will continue to add detail and refinement to their characters.

- Check-in: Character Sharing
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7/26: Advanced Topics/Free Work

- Check-in: Inspiration Sharing
- Presentation/Discussion:

Based on student interest, the Instructor and/or TAs will present advanced or related topics. These topics may include rigging and animation, advanced rendering, advanced modeling/sculpting, etc.

- Activity: Free Work

Students will have time to pursue and refine any part of their projects they would like.

7/27: Free Work

- Check-in: Inspiration Sharing
- Activity: Free Work/Play

Students will have time to pursue and refine any part of their projects they would like.

7/28: Free Work

- Check-in: Inspiration Sharing
- Activity: Free Work/Play

Students will have time to pursue and refine any part of their projects they would like.

Introduction to 3D Animation

7/17/2022

Intro to Animation – What excites you about animation? A Bouncing ball is where it all starts and some basic physics tossed into the mix. Where will it lead us? How mastering the basics will set you up for future success in animation.

Spin the Wheel! - What is your story prompt? We will incorporate the story prompt and the props provided into a short, animated exploration this week.

7/18/2022

Reference and Story – How is reference used in animation, and why is it important? Basic story structure, what can myths and folktales tell us about man's need to create narratives.

Scene Setup - Where is your camera? where are your characters in relation to the camera (your audience) and how is that helping to tell your story.

7/19/2022

Animation Posing – What makes a great pose? What are some of the rules for improving your character poses? You can craft and quickly change your ideas and express your character's emotions with strong poses and staging.

Blocking – Let's create a **Blocking Pass** using the tools we learned in the **Animation Posing** lecture.

7/20/2022

Arcs and Weight – Using Maya's tools to evaluate and improve your animation. What is an arc anyway, isn't that what welder's use?? These are basic building blocks that every animator swears by, so let's get started.

Rough 01 – Let's create a **Rough Pass 01** using an in-class exploration of the graph editor, with a timing discussion tossed in for good measure.

7/21/2022

Overlapping Action – What does an arm overlapping look like? Let's also stroll through the Advanced Skeleton tool, and rig one of your models. How you can get your models up and running (literally) quickly.

Rough 02 - Let's create a **Rough Pass 02** where we begin to refine our poses and timing. Maybe your idea needs some updating as well?

7/24/2022

Timing – is everything.

Final - Let's create a **Final Pass**. Dive into the curve and make edits to tighten further your ideas and strengthen the performance.

7/25/2022

Exaggeration!!! IRL is fantastic, but acting for animation is a different beast. Why was Polar Express really creepy ? .. and other musings on using exaggeration to clarify your performance beats and avoiding the uncanny valley.

Polish - Let's create a **Polish Pass** where we begin to add small nuances and details that most viewers might miss, but create more believable characters.

7/26/2022

What makes animated shorts appealing? ... Do I always have to sing so loud in the car with Elsa in 'letting go' ? How do all of the pieces and parts of an animated show come together to make a successful piece.

Locked - Today we will create a **Locked Pass** and lock down our Playblasts , work on the final edits, and make everything presentable.

7/27/2022

Activity: Free Work Time

Students may work on any aspect of their character that they desire. Each student MUST submit any and all work they wish to be in the showcase to the instructor by the end of class. There is no guarantee that anything submitted after class will be included in the showcase.

7/28/2022

Activity: Free Time and Showcase

The time in class before the showcase is used by the instructor to finalize the showcase. Students can work on whatever they like, but should be available to assist the instructor and TAs with showcase prep if needed.

Introduction to Stop Motion

7/17/2022

Intro to Stop Motion – What excites you about stop motion? Stop motion is such a physical process that requires set pieces and materials. It is a craft and an artform that is as old as cinema. Let's explore some of the basic techniques and software that you can use, off the shelf, to create your own stories.

Found Objects - Using found objects and clay, the students will explore the juxtapositions of size shape and color that are possible using stop-motion techniques.

7/18/2022

Food Fight !! – The class will review successful food and organics used in stop motion animation, and discuss various techniques.

Food That Moves - Armed with a variety of food and organic material the students will create a short exploration of this new medium, inspired by the likes of Jan Svankmajer and the Brothers Quay.

7/19/2022

Shadow Puppets – Fairytales are not only for children, from the shadow puppets of the wayang kulit, to the inspired tales from Lottie Reiniger, the class will explore the art and animation of silhouette stop motion animation.

Shadows on a Cave Wall– With Lotte Reiniger as our guide the students will attempt to create a short shadow puppet performance.

7/20/2022

Let's use this time to explore more successful shadow puppet techniques in 2D stop motion and 3D animation to tell successful and engaging stories. The class will build, test and shoot footage of their puppet creations.

7/21/2022

A Cut Above the Rest – Stop motion puppets can sometimes be intricate fine art portraits, paintings, drawings, or cut out pictures. Let's explore the art and science of cut-out animation and stop motion techniques.

Now for Something Completely Different - With masters Terry Guillian and Yuri Norstein as their guide, the students will navigate the world of 2D cutout animation and create imaginative explorations.

7/24/2022

Let's use this time to explore more successful cut-out puppet techniques in 2D stop motion and 3D animation to tell successful and engaging stories. The class will build, test and shoot footage of their puppet creations.

7/25/2022

Shifting Sands – Sand animation is a time intensive and rewarding technique that involves only a few tools. Let's get our hands dirty and explore the world of animated sand and the visual stories that are possible.

The Shifting Sands of Animation - Inspired by the modern pursuits of independent sand animation artists such as Corrie Francis Parks, the students will embark on a short excursion into the arts of sand and stop motion.

7/26/2022

What will be your final stop motion creation? What technique will you choose? Let's look at one final pixilation technique to toss into the mix. Norman McLaren guides us to be better neighbors and citizens, along the way the students will explore this powerful animation technique.

7/27/2022

Activity: Free Work Time

Students may work on any aspect of their final stop motion project. Each student MUST submit any and all work they wish to be in the showcase to the instructor by the end of class. There is no guarantee that anything submitted after class will be included in the showcase.

7/28/2022

Activity: Free Time and Showcase

The time in class before the showcase is used by the instructor to finalize the showcase. Students can work on whatever they like, but should be available to assist the instructor and TAs with showcase prep if needed.