

# Course Syllabus

## ANIMATION

Are you inherently creative? Do you have an eye for drawing, technology, and timing? If so, 2D Animation is the course for you! 2D animation creates movement in a two-dimensional artistic space. And in this course, you will learn the necessary skills to do just that. 2D Animation will give you the tools to conceptualize and bring your animation dreams to life! Using a variety of software and design programs, you'll have the power to transform your creative notions into reality! Design, define, and complete a variety of digital design projects including creating your own website! Learning about 2D Animation could lead to a thriving career in the growing world of technology and animation!

### Required Materials

The following program will need to be downloaded for use during the course:

- Stop Motion Studio App

The following free, cross-platform programs will need to be downloaded for use during the course (programs will run on Windows XP and higher, Linux and Mac computers):

- GIMP (GNU Image Manipulation Program)
- Tupi 2D Magic
- Blender
- Audacity
- OpenShot

Required Computer System Requirements:

- 2 GB of RAM

- 32-bit dual core
- 2Ghz CPU
- An OpenGL 2.1 compatible graphics card or chip

#### Recommended Items and Computer System Requirements:

- Smartphone or tablet computer
- Computer with keyboard that includes number pad
- 64-bit quad core CPU
- 8 GB of RAM
- HD display
- Three-button mouse
- OpenGL 3.2 compatible graphics card with 2 GB of RAM

#### Additional Materials Required for Unit 1:

- Stop Motion Studio (or similar stop motion app/software)
- Modeling clay (optional)
- Camera (can be an actual camera or a camera on a tablet or device)
- Scissors
- Stiff paper or cardboard
- Glue or tape
- Thumbtack or pushpin
- Mirror

#### Additional Materials:

- Paper, pencil or pens
- Magazines and/or newspapers

#### **Organizational Suggestions:**

It might be helpful to create a folder/subfolders on your computer to help organize your work for this course. For examples, you might create something similar to this:

- **Main Folder:** Animation Work
- **Sub-Folders:**
  - U1: Stop Motion Work
  - U2: Flip Book Work
  - U3: Digital Flip Books and GIF Work
  - U4: Rotoscope Work
  - U5: Character Drawing Work
  - U6: Animated Figure Work
  - U7: Blender Work
  - U8: Animation Essay
  - U9: Animated Text Work
  - U10: Storytelling Work
  - U11: Audacity-OpenShot Animation Work
  - U12: Portfolio and Pitch Work

## Unit 1: Basics of Animation

### Learning Objectives:

- Trace the origins and early history of the art of animation
- Explore how the eye and brain process moving images
- Compare the differences between past animation techniques and current animation technologies
- Understand the differences between various types of animation

### UNIT 1 Assignments

Assignment	Type	Score
Basics of Animation: Unit 1 Text Questions	Homework	10 points
Basics of Animation: Unit 1 Activity	Homework	15 points
Unit 1 Discussion Assignment 1	Discussion	5 points

Unit 1 Discussion Assignment 2	Discussion	5 points
Unit 1 Quiz – Basics of Animation	Quiz	15 points

## Unit 2: Hand Drawn Animation

### Learning Objectives:

- Explain how drawn animation evolved from early picture viewing devices
- Understand and apply Disney’s 12 Principles of Animation
- Use key terms of hand-drawn animation
- Appreciate the world of animation beyond the United States
- Include design elements in your drawings

### UNIT 2 Assignments

Assignment	Type	Score
Hand Drawn Animation: Unit 2 Text Questions	Homework	10 points
Hand Drawn Animation: Online Animation Lab Questions	Homework	10 points
Hand Drawn Animation: Unit 2 Activity 1	Homework	15 points
Hand Drawn Animation: Unit 2 Activity 2	Homework	15 points
Hand Drawn Animation: Unit 2 Activity 3	Homework	15 points
Unit 2 Discussion Assignment 1	Discussion	5 points
Unit 2 Discussion Assignment 2	Discussion	5 points

Unit 2 Quiz – Hand Drawn Animation	Quiz	15 points
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## Unit 3: Computer Animation and CGI

### Learning Objectives:

- Understand the difference between a bitmap image and a vector image
- Trace the process of CGI production from idea to theater
- Discuss the pros and cons of different production processes
- Define and explain kinematics and animatics
- Identify the key departments in an animation studio

### UNIT 3 Assignments

Assignment	Type	Score
Computer Animation and CGI: Unit 3 Text Questions	Homework	10 points
Computer Animation and CGI: Unit 3 Activity 1	Homework	15 points
Computer Animation and CGI: Unit 3 Activity 2	Homework	15 points
Unit 3 Discussion Assignment 1	Discussion	5 points
Unit 3 Discussion Assignment 2	Discussion	5 points
Unit 3 Quiz – Computer Animation and CGI	Quiz	15 points

## Unit 4: Digital 2D Animation and Rotoscopy

### Learning Objectives:

- Create animation sequences with layered drawings and backgrounds
- Trace videos to make rotoscoped sequences
- Use the important functions of 2D animation software
- Export your animated videos to share with the world
- Apply graphical tools to improve your digital drawings

## UNIT 4 Assignments

Assignment	Type	Score
Digital 2D Animation and Rotoscopy: Unit 4 Text Questions	Homework	10 points
Digital 2D Animation and Rotoscopy: Unit 4 Activity	Homework	15 points
Unit 4 Discussion Assignment 1	Discussion	5 points
Unit 4 Discussion Assignment 2	Discussion	5 points
Unit 4 Quiz – Digital 2D Animation and Rotoscopy	Quiz	15 points

## Unit 5: Human Anatomy and Form

### Learning Objectives:

- Draw the human body in proportion
- Identify and create the walk cycle for animation
- Discuss how poses communicate emotion
- Develop your own animated characters based on real anatomy

## UNIT 5 Assignments

Assignment	Type	Score
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Human Anatomy and Form: Unit 5 Text Questions	Homework	10 points
Human Anatomy and Form: Online Animation Lab Questions	Homework	10 points
Human Anatomy and Form: Unit 5 Activity	Homework	15 points
Unit 5 Discussion Assignment 1	Discussion	5 points
Unit 5 Discussion Assignment 2	Discussion	5 points
Unit 5 Quiz – Human Anatomy and Form	Quiz	15 points

## Unit 6: Animated Motion

### Learning Objectives:

- Understand the Laws of Motion and Gravity
- Apply physics principles to the movement of your characters
- Create facial expressions that convey emotions
- Turn your characters into first-rate actors

### UNIT 6 Assignments

<b>Assignment</b>	<b>Type</b>	<b>Score</b>
Animated Motion: Unit 6 Text Questions	Homework	10 points
Animated Motion: Unit 6 Activity 1	Homework	15 points
Animated Motion: Unit 6 Activity 2	Homework	15 points
Unit 6 Discussion Assignment 1	Discussion	5 points

Unit 6 Discussion Assignment 2	Discussion	5 points
Unit 6 Quiz – Animated Motion	Quiz	15 points

## Animation Midterm Exam

### Learning Objectives:

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from the first six units in this course.

(**Note:** You will be able to open this exam only one time.)

## MIDTERM Assignments

Assignment	Type	Score
Animation Midterm Exam	Exam	<b>50 points</b>
Midterm Discussion Assignment	Discussion	5 points

## Unit 7: Intro to Blender

### Learning Objectives:

- Explain the difference between motion capture and keyframe animation
- Grasp the power of modern animation techniques, including bones, muscles, and rigging
- Understand the process of simulating water, hair, and other dynamics
- Navigate the Blender interface



- Create simple animations using parenting, movement, rotation and scaling along

with keyframes

## UNIT 7 Assignments

Assignment	Type	Score
Intro to Blender: Unit 7 Text Questions	Homework	10 points
Intro to Blender: Unit 7 Activity	Homework	15 points
Unit 7 Discussion Assignment 1	Discussion	5 points
Unit 7 Discussion Assignment 2	Discussion	5 points
Unit 7 Quiz – Intro to Blender	Quiz	15 points

## Unit 8: Character Modeling

### Learning Objectives:

- Use various modeling techniques to create a character model
- Hide background geometry
- Navigate the 3D view using shortcuts
- Switch between perspective and orthographic mode
- Understand and apply the principles of topology

## UNIT 8 Assignments

Assignment	Type	Score
Character Modeling: Unit 8 Text Questions	Homework	10 points

Character Modeling: Unit 8 Activity	Homework	15 points
Unit 8 Discussion Assignment 1	Discussion	5 points
Unit 8 Discussion Assignment 2	Discussion	5 points
Unit 8 Quiz – Character Modeling	Quiz	15 points

## Unit 9: Character Animation

### Learning Objectives:

- Create an armature rig to fit a bipedal character model
- Skin, or attach, a character model to a rig so that it deforms like skin with the movements of the various bones
- Develop a seamless walk cycle for a rigged character model

## UNIT 9 Assignments

Assignment	Type	Score
Character Animation: Unit 9 Text Questions	Homework	10 points
Character Animation: Online Animation Lab Questions	Homework	10 points
Character Animation: Unit 9 Activity	Homework	15 points
Unit 9 Discussion Assignment 1	Discussion	5 points
Unit 9 Discussion Assignment 2	Discussion	5 points

Unit 9 Quiz – Character Animation	Quiz	15 points
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## Unit 10: Storytelling

### Learning Objectives:

- Write dialogue and action in proper film script format
- Understand three-act script structure
- Identify camera shots, angles, and movement
- Create storyboards for animation

### UNIT 10 Assignments

Assignment	Type	Score
Storytelling: Unit 10 Text Questions	Homework	10 points
Storytelling: Unit 10 Activity 1	Homework	15 points
Storytelling: Unit 10 Activity 2	Homework	15 points
Storytelling: Unit 10 Activity 3	Homework	15 points
Unit 10 Discussion Assignment 1	Discussion	5 points
Unit 10 Discussion Assignment 2	Discussion	5 points
Unit 10 Quiz – Storytelling	Quiz	15 points

## Unit 11: Video, Music, & Sound

### Learning Objectives:

- Appreciate how sound affects emotions
- Record good voice acting for animation
- Match animated mouth shapes to the sounds of speech
- Design and edit a simple soundtrack for video
- Add titles and export an animation with sound

## UNIT 11 Assignments

Assignment	Type	Score
Video, Music, & Sound: Unit 11 Text Questions	Homework	10 points
Video, Music, & Sound: Online Animation Lab Questions	Homework	10 points
Video, Music, & Sound: Unit 11 Activity	Homework	15 points
Unit 11 Discussion Assignment 1	Discussion	5 points
Unit 11 Discussion Assignment 2	Discussion	5 points
Unit 11 Quiz – Video, Music, & Sound	Quiz	15 points

## Unit 12: Careers in Animation

### Learning Objectives:

- Put together a portfolio of your work
- Recognize plagiarism and know how to avoid it in animation
- Pitch your animation project
- Understand the difference between jobs in animation vs. game design
- Describe how to protect your digital animation work

## UNIT 12 Assignments

<b>Assignment</b>	<b>Type</b>	<b>Score</b>
Careers in Animation: Unit 12 Text Questions	Homework	10 points
Careers in Animation: Online Animation Lab Questions	Homework	10 points
Careers in Animation: Unit 12 Activity 1	Homework	15 points
Careers in Animation: Unit 12 Activity 2	Homework	15 points
Careers in Animation: Unit 12 Activity 3	Homework	15 points
Unit 12 Discussion Assignment 1	Discussion	5 points
Unit 12 Discussion Assignment 2	Discussion	5 points
Unit 12 Quiz – Careers in Animation	Quiz	15 points

## Animation Final Exam

### Learning Objectives:

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from units seven to twelve in this course –

the last six units. (**Note:** You will be able to open this exam only one time.)

## FINAL Assignments

<b>Assignment</b>	<b>Type</b>	<b>Score</b>
Animation Final Exam	Exam	<b>50 points</b>

Class Reflection Discussion Assignment	Discussion	10 points
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