

# Computer Animation I

Kinetic Imaging 338

Fall 2015, MW 12:30pm-2:50pm, Depot Annex 1013

## **INSTRUCTOR**

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Office Hours: By appointment

## **COURSE OBJECTIVES**

This course will introduce students the basics principles and aesthetics of 3D computer animation using Maya and Mudbox. We will consider the following:

- The aesthetics of 3D shapes, spaces, and motions
- What are the aesthetic and technical limitations and benefits of 3D animation vs 2D media?
- How can 3D animation play a role in my artistic practice?
  - Am I interested in reproducing what I see?
  - Am I interested in pushing my imagination to create things not of this world?
  - Can I combine 3D animation with my other skills?
- How can I draw the viewer into a virtual space?

By the end of the semester, students will be able to:

- Explain the underlying technology behind the elements of 3D models (NURBS, curves, Polygons, vertices, etc)
- Effectively utilize the polygon and surface tools in Maya
- Animate models without the use of skinning, rigging, or inverse-kinematics
- Create UV maps and materials
- Create basic lighting for a scene
- Animate a camera
- Understand the available rendering technology
- Elaborate the start-to-finish workflow of 3D animation

## **KI ATTENDANCE POLICY**

Out of respect for your peers and to foster the most professional working environment, a rigid attendance policy is to be observed at all times. Punctuality, preparedness, and ability to meet deadlines are considered in the assessment of your progress.

The policy is:

- 2 absences allowed per semester
- 2 tardies equals one absence
- Critiques are mandatory

Two absences per semester are allowed due to the inevitable car problem, illness, or family emergency. Reserve these two absences for emergencies. Any absence over two will result in a lowered final grade for the course. If there are *unavoidable* emergencies please communicate these *in*

writing to your instructor. *Do not* put the instructor into the position of having to determine if an absence is “excused” or not. There are no “excused” absences other than those noted in the university guidelines (military or university service).

If you miss a class, please get the information you have missed from a classmate and **be prepared** for the next class.

Coming to class late or leaving earlier is disruptive. Be aware that two tardies becomes one absence. A tardy is being over ten minutes late for class OR leaving class ten minutes before it is dismissed. These add up quickly so be diligent.

## **GRADING**

In grading your projects, I will base my grade on the following factors:

**Experimentation** - Evidence that you are pushing yourself to create something unique and interesting

**Conceptual and developmental cohesion** - The solidity of your work’s content, and the way in which that content is elaborated upon

**Technique** - Your skill with the technology to craftfully realize your intentions

**Assignment appropriateness** - Whether or not your work fits the description and requirements of the assignment

**Work ethic** - Evidence that you invested sufficient time, energy, and thought into the work

Assignments: ~7% each (50% evenly distributed across 7 assignments)

Midterm: 20%

Final: 20%

Class Participation: 10%

***For each absence above your two allowed absences, 8% will be deducted from your final grade. For each tardy above your two allowed absences, 4% will be deducted from your final grade.***

## **DEADLINES / ASSIGNMENT TURN-IN**

All assignments will be turned in via Blackboard. They are due one hour before class begins.

All projects should be named “LastName\_FirstName\_AssignmentNumber.mb/mov/etc”.

## **ASSIGNMENTS:**

This class will have 7 short assignments, a midterm, and a final.

Below are listed general descriptions of these projects.

### **Assignment 1:**

Create a (roughly shaped) character model using only polygon primitives that have been manipulated by transform tools and nothing else.

**Assignment 2:**

Create a geometric model (this model will be paired with an organic model created in the next assignment). Character models are not allowed. No texturing, lighting, etc, is allowed.

**Assignment 3:**

Create an organic model (that stands in contrast to the geometric model from assignment 2). Character models are not allowed. No texturing, lighting, etc, is allowed.

**Assignment 4:**

Create textures and apply them as materials to your geometric and organic models.

**Assignment 5:**

Create a basic scene for your organic and geometric models. Light the scene. Don't spend too much time working on the scene itself - a simple backdrop is fine. Focus more on the lighting. Render 3 images of the scene.

**Midterm:**

Create a still-life scene. Model and texture all objects. No character models are allowed. Light the scene. Then, animate the objects. There are many ways to imagine the animation for the scene - here are some suggestions if you're not sure where to start: Rube Goldberg puzzle, poltergeist, timelapse of growing or rotting. The animation can stay within the philosophical bounds of a still life, but it doesn't have to - it can be silly or serious. Create an animated camera that moves through the scene. The animation must be at least 30 seconds long at 24FPS. Render in Maya Software.

**Assignment 6:**

Read *Origin of the Work of Art* by Heidegger.

Create a 15 second animation in response.

**Assignment 7:**

Watch Rick Roderick on Foucault: <https://www.youtube.com/watch?v=hP79SfCfRzo>

Read *Las Meninas* by Foucault.

Create a 15 second animation in response

**Final:**

Create a 1 minute animation on any topic.

## **ARTISTS TO CONSIDER**

I will draw from work by these artists (among potential others) to screen in class during the semester:

stephen hilyard

claudia hart

gregory bennett

zhou li

alex mcleod

jennifer steinkamp

zeitguised

robert lue

kurt hentschlager

jim duesing

brandon morse

takuya hosogane

graham young

barry doupe

francoise gamma

## CLASS SCHEDULE

Date:	Classtime:	Assignment:	Digital Tutors Reference:
W 19 Aug	Maya UI, 3D navigation, viewport types, primitives, transform tools	Assignment 1 given	Introduction to Maya 2015, 1-7 Beginner's Guide to Maya, 1-6
M 24 Aug	Booleans, extrusion, Assignment 2 worktime	Assignment 1 due Assignment 2 given	Modeling Reference Library, 1-5
W 26 Aug	Surfaces and curves, Assignment 2 worktime		Exploring NURBS in Maya, all Modeling Hard Surfaces, all
M 31 Aug	Soft select, component manipulation, mesh smoothing, Assignment 3 worktime	Assignment 2 due Assignment 3 given	Beginner's Guide to Maya, 7 Introduction to Maya 2015, 8-11 Quickstart to Modeling in Maya, all Modeling Reference Library, 6
W 2 Sep	Edit Mesh tools, Assignment 3 worktime		Beginner's Guide to Maya, 8-9 Modeling Reference Library, 7-21 Introduction to Maya 2015 15-33
M 7 Sep	NO CLASS	NO CLASS	NO CLASS
W 9 Sep	Project management, UV Mapping, lambert/blinn/phong materials, basic material settings, creating diff/spec/bump textures in Photoshop	Assignment 3 due Assignment 4 given	Beginner's Guide to Maya, 13-14 Fundamentals of Texture Mapping, 1-8 Getting Started with UVs in Maya, all UV Mapping Workflows in Maya, all Texture Painting in Maya and Photoshop, all Introduction to Maya 2015, 35-44
M 14 Sep	Assignment 4 worktime		
W 16 Sep	Light types, basic rendering in Maya software	Assignment 4 due Assignment 5 given	Introduction to Lighting in Maya, all Beginner's Guide to Maya, 11-12, 15
M 21 Sep	NO CLASS	NO CLASS	NO CLASS
W 23 Sep	NO CLASS	NO CLASS	NO CLASS
M 28 Sep	Timeline, attribute keying, graph editor	Assignment 5 due Midterm given	Beginner's Guide to Maya, 10 Beginner's Guide to Animation in Maya, all Quickstart to Animation in Maya, all
W 30 Sep	Cameras, batch rendering, animation settings, Midterm		Introduction to Rendering in Maya, all Introduction to Camera Animation, all

	worktime		
M 5 Oct	Motion paths, Midterm worktime	Midterm first draft due	Maya Animation Reference Library, 14 Animation Ask DTs in Maya, 9
W 7 Oct	Midterm worktime		
M 12 Oct	Midterm worktime		
W 14 Oct	Midterm critique	Midterm due	
M 19 Oct	Midterm critique	Assignment 6 given	
W 21 Oct	Discuss Assignment 6 reading, deformers		Introduction to Rigging in Maya, 19, 23
M 26 Oct	Assignment 6 worktime		
W 28 Oct	Assignment 6 critique	Assignment 6 due Assignment 7 given	
M 2 Nov	Discuss assignment 7 reading, mental ray rendering		Introduction to Mental Ray in Maya 2015, all
W 4 Nov	Assignment 7 worktime		
M 9 Nov	Assignment 7 critique	Assignment 7 due Final given	
W 11 Nov	Mudbox, Final worktime		Introduction to Mudbox 2015, all
M 16 Nov	Final worktime		
W 18 Nov	Final worktime	Final first draft due	
M 23 Nov	Final worktime		
W 25 Nov	NO CLASS	NO CLASS	NO CLASS
M 30 Nov	Final critique	Final due	
W 2 Dec	Final critique		
Finals	Final critique		