

3D Computer Animation II

KINE 438

Spring 2015, MW 3:00pm-5:20pm, Depot Annex 1013

INSTRUCTOR

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Office Hours: By appointment

COURSE OBJECTIVES

In this course, students develop intermediate and advanced skills in 3D modeling, animation, and virtual space. Throughout the semester, we will consider the following:

- Choreographing animated characters through inverse kinematics and a character rig
- Visual-music in a 3D virtual setting using nDynamics simulations
- Photogrammetry and virtual collage
- Filtering 3D animation through the lens of multiple historical art periods and movements.

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

Project 1 In-class Rig and Animation A - 3%
Project 1 In-class Rig and Animation B - 3%
Project 1 Work-In-Progress - 4%
Project 1 Final - 10%

Project 2 Short nDynamics Simulation - 3%
Project 2 Photogrammetry Model - 3%
Project 2 Work-In-Progress - 4%
Project 2 Final - 10%
Project 3 Four Collected Artworks - 2%
Project 3 Worldview Analyses - 2%
Project 3 Worldview Essay Rough Draft - 2%
Project 3 Worldview Essay Final Draft - 5%
Project 3 Worldview Presentation - 5%
Project 3 Work-In-Progress - 4%
Project 3 Final - 15%
Reading Responses - 10%
Participation - 15%

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.

PARTICIPATION AND CRITIQUES

The most important form of participation is active engagement in the critique of your peers' work. I am allocating significant amounts of time for project critique in this class. During critique, I expect every student to concentrate on their peers' work and give both positive and constructive feedback that goes beyond the surface details of the work, or your immediate reaction. Both honesty and respect are of utmost importance.

The second most important form of participation is active engagement in the discussions surrounding assigned readings. Again, I expect well-considered responses from everyone in the class.

READINGS / LISTENINGS

All readings or podcasts or Youtube lectures, etc. will be provided as links to URLs or as PDFs on Blackboard

After each reading or listening, a reading response entry on Blackboard of a minimum of 200 words will be due the next week.

Readings / Listeners will be drawn from the below, among possible others:

Multimedia: From Wagner to Virtual Reality, eds. Randall Packer & Ken Jordan
Vibrant Matter: A Political Ecology, by Jane Bennett
Human Creation Between Reality and Illusion, ed. Anna-Teresa Tymieniecka
How We Became Posthuman, by N. Katherine Hayles
Ken Wilber and Kevin Kelly discussion on technology and humanity -
<https://www.youtube.com/watch?v=k4mHbUq-pb4>

Derek Matrevers on Art -

http://hwcdn.libsyn.com/p/2/a/5/2a5dacd50532bff5/MatraversMixSes.MP3?c_id=1779312&expiration=1420511755&hwt=d7a591531d4679e2128cfd23ca722d10

Alain de Botton on Aesthetics in Architecture -

http://philosophybytes.libsyn.com/alain_de_botton_on_the_aesthetics_of_architecture

Graham Harman on object philosophy - <https://www.youtube.com/watch?v=QJ0GR9bf00g>

DEADLINES / ASSIGNMENT TURN-IN

All projects and assignments will be turned in through Blackboard. Because we need every moment of class time for critiques, all necessary files must be present on Blackboard **at least 1 hour before class begins**, allowing me time to download and prepare them.

I will accept late projects without grade deduction up to the end of the semester. However, you will receive no critique, and I will provide no feedback. I will assign a fair grade without deduction, but I will not explain it.

All projects should be named "LastName_FirstName_ProjectName.mp4/mb/whatever". This is imperative for grading and organization purposes. Failure to name projects correctly will result in an annoyed teacher, and possibly a 0 if I am unable to determine that it's your project I'm looking at.

DUE DATES TIMELINE

- January 21
 - Project One - In-class assignment - Rig and animate default Mudbox character
 - Project Three - Turn in 4 collected artworks from assigned worldview
- January 26
 - Project One - In-class assignment - Rig and animate found model
- February 2
 - Project One - Show and turn-in Work-In-Progress
 - Project Three - Turn in worldview analyses of 4 collected artworks
- February 9
 - Project One - Due
- February 16
 - Project Three - Worldview essay rough drafts due
- February 23
 - Project Two - 5 second nDynamics simulation due
- March 4
 - Project Two - One photogrammetry model due
 - Project Three - Worldview essays and presentations due for 1, 2, 3, 4
- March 16
 - Project Three - Worldview essays and presentations due for 5, 6, 7, 8
- March 18
 - Project Two - Show and turn-in Work-In-Progress

- March 23
 - Project Three - Worldview essays and presentations due for 9, 10, 11, 12
- March 25
 - Project Three - Worldview essays and presentations due for 13, 14, 15, 16
- March 30
 - Project Two - Due
- April 13
 - Project Three - Show and turn-in Work-In-Progress
- April 22
 - Project Three - Due

PROJECTS

- **Project One - Impossible Architecture Choreography**
 - Sub-assignment - In-class rig and animation A
 - Due January 21
 - Rig and animate the default Mudbox character during class time. Create a 5-10 second character animation, un-rendered. We will go around the room watching them at the end of class.
 - Turn in on Blackboard: Maya file(s)
 - Sub-assignment - In-class rig and animation B
 - Due January 26
 - Download a free 3D model from the internet. Rig and animate it during class time. Create a 5-10 second character animation, un-rendered. We will go around the room watching them at the end of class.
 - Turn in on Blackboard: Maya file(s)
 - Sub-assignment - First project Work-In-Progress
 - Due February 2
 - Come to class ready to show an un-rendered version of your first project to me and the rest of class. We will provide preliminary feedback and advice. I will let you know what needs to be improved for the final version to meet expectations.
 - Turn in nothing.
 - Main assignment for first project
 - Due February 9
 - Create a virtual environment of impossible architecture, and a character of any kind. Choreograph an animated dance for the character within/around the architectural environment. Render the animation to an .mp4 or .mov file. The video file must include a title screen with your name and the title of the piece at the beginning. The animation must be at least 30 seconds not including the title screen.
 - Turn in on Blackboard: One rendered .mp4 or .mov file

● Project Two - Found-Object Collage + Visual-Music Simulation

- Sub-assignment - short nDynamics simulation
 - Due February 23
 - Using any simulation (particles, cloth, hair, etc), create and render an animation at least 5 seconds long at a minimum of 24 frames per second (120 frames total at minimum)
 - Turn in on Blackboard: One rendered .mp4 or .mov file
- Sub-assignment - Photogrammetry model
 - Due March 4
 - Use photogrammetry to create at least one 3D model
 - Turn in on Blackboard: Maya file(s)
- Sub-assignment - Second project Work-In-Progress
 - Due March 18
 - Come to class with at least 5 seconds of your second project rendered (a rough-draft, first-pass render, not necessarily the final version). Have the environment well-fleshed-out. Be ready to show it to me and the rest of class. We will provide preliminary feedback and advice. I will let you know what needs to be improved for the final version to meet expectations.
 - Turn in nothing
- Main assignment for second project
 - Due March 30
 - Create an environment of found objects, assembled from photogrammetry, ripped from videogames, and/or downloaded from the internet. It must include at least one model obtained through photogrammetry. Within that environment, create a visual-music animation that syncs nDynamics simulations with a clip of music. Render the animation to an .mp4 or .mov file. The video file must include a title screen with your name and the title of the piece at the beginning. The animation must be at least 20 seconds not including the title screen. The animation must be at a minimum of 24 frames per second (480 frames minimum)
 - Turn in on Blackboard: One rendered .mp4 or .mov file

● Project Three - Worldview Adoption and Reaction

- Sub-assignment, ungraded
 - January 12
 - I have written the names of 20+ artistic eras and movements onto slips of papers. In class, you will randomly pick one of these “from a hat.” If you don’t like it, you have one opportunity at that moment to throw it back and pick another, which you will then be stuck with. Over the course of the semester you investigate the worldview of this era/movement, write an essay, create a presentation, and create an animation based on it.

- Turn in nothing.
- Sub-assignment - 4 collected artworks
 - Due January 21
 - Collect 4 artworks that you think well-represent your assigned worldview.
 - Turn in on Blackboard: Image or video files of each of the artworks. If the work is temporal, turn in a video, or put a reference to media that can be found in the VCU library. Which is to say, if the work is temporal you CANNOT turn in just an image for that work, and I need to be able to access (via the internet of the library) any media recording of the work.
- Sub-assignment - Worldview analysis
 - Due February 2
 - Using the worldview analysis sheets provided on Blackboard, complete a worldview analysis for each of the 4 collected artworks.
 - Turn in on Blackboard: PDFs of your completed worldview analyses, one PDF for each.
- Sub-assignment - Worldview essay rough draft
 - Due February 16
 - Turn in at least 750 words of a rough draft of your worldview essay.
 - Turn in on Blackboard: A Word document of your essay.
- Sub-assignment - Worldview essay final draft and presentation
 - Due March 4 for presentations 1, 2, 3, 4
 - Due March 16 for presentations 5, 6, 7, 8
 - Due March 23 for presentations 9, 10, 11, 12
 - Due March 25 for presentations 13, 14, 15, 16
 - Write an essay describing your assigned worldview. Your primary goal should be to help the reader grasp the underlying frame of mind of people, and then extrapolate how that frame of mind impacted the art of the period or movement. The essay must be no less than 1000 words and no more than 1500 words long. You may approach this however you feel is appropriate, but here are some suggestions:
 - examine the implications of concurrent historical events
 - question the social and cultural assumptions of the time
 - ponder the work of contemporary philosophers - remember it's not about just what they said, it's about the fundamental way they approached questions
 - describe the artwork by drawing direct correlations between the above factors and stylistic characteristics of the art
 - Deliver to the class a 10 minute presentation (7 minute presentation + 3 minutes for questions and comments) to accompany your essay. The presentation is NOT a reading of your essay - presentations and essays are not the same thing and should be delivered in the same way, even if they have the same content. You may use whatever visual aids you choose for your presentation, be that a powerpoint, a poster-board, a series of images or

short(!) videos, or just waving your arms around if that's most effective. But beware, you will be docked if your visual aids are inadequate.

- Turn in on Blackboard: A word document of your essay
- Sub-assignment - Third project Work-In-Progress
 - Due April 13
 - Come to class with at least 5 seconds of each half (a total of at least 14 seconds) of your third project unrendered. By this point, the idea and any necessary modeling should be well-fleshed-out. Be ready to show it to me and the rest of class. We will provide preliminary feedback and advice. I will let you know what needs to be improved for the final version to meet expectations.
 - Turn in nothing
- Main assignment for third project
 - Due March 30
 - Create two animations that are each roughly 20 seconds in duration. The two animations can either blend one in the other or cut sharply from one to the next. The first animation should be created in the style of the assigned worldview. That means, while making the first animation, put yourself into the mindset of a person in that worldview. If I were [Bach/Richter/Serra] making 3D animation, what would I do? Make something that doesn't just mimic the style, it EMBODIES the worldview. The second animation is your response to that worldview. What is your reaction to the assigned worldview? What do you agree with or disagree with, or are attracted to or repulsed by? The second animation can either explicitly show these reactions, or it can implicitly suggest them by building its own worldview as a response to the assigned one. Render the final animation to an .mp4 or .mov file. The video file must include a title screen with your name and the title of the piece at the beginning. The animation must be at least 40 seconds not including the title screen.
 - Turn in on Blackboard: One rendered .mp4 or .mov file

CLASS SCHEDULE

M Jan 12 - Bureaucracy. Pick era/movement/worldview for major assignment. FK vs IK. Abstracted example of skeleton, skinning, rigging, animating. Homework: Digital Tutors Introduction to Character Rigging in Maya.

W Jan 14 - Character example of rigging. Worldview analysis.

M Jan 19 - NO CLASS

W Jan 21 - Build rig for Mudbox default human, make a 5-10 second animation, and show in class. Homework: Maya Youtube character rigging tutorials 1-9, the rest are optional ... Collected artworks due

M Jan 26 - Download free character model from internet, build rig, make a 5-10 second animation, show in class.

W Jan 28 - Work time for first project

M Feb 2 - Show WIP first project in class, get feedback, 8 minutes per person ... Worldview analysis due

W Feb 4 - Work time for first project

M Feb 9 - First assignment due - Impossible architecture choreography. First assignment critiques, 15 minutes per person

W Feb 11 - First assignment critiques, 15 minutes per person

M Feb 16 - Cloth simulation, hair simulation .. Rough draft for worldview essays due

W Feb 18 - Particle simulations

M Feb 23 - Syncing simulations to audio, MEL scripting .. 5 second nDynamics simulation due -

W Feb 25 - Photogrammetry demo

M Mar 2 - Ripping models with 3D Ripper DX / Ninja Ripper

W Mar 4 - Workday for 2nd project ... One model created from photogrammetry due - Presentations 1, 2, 3, 4

M Mar 9 - NO CLASS SPRING BREAK

W Mar 11 - NO CLASS SPRING BREAK

M Mar 16 - Workday for 2nd project... Presentations 5, 6, 7, 8

W Mar 18 - WIP 2nd assignment review, 8 minutes per person

M Mar 23 - Workday for 2nd project ... Presentations 9, 10, 11, 12

W Mar 25 - Workday for 2nd project ... Presentations 13, 14, 15, 16

M Mar 30 - 2nd project due, create a collage of reconstructed real objects mixed with found free models, mixed with ripped geometry. In that environment, create a piece of visual music using nDynamics simulations. Critiques, 15 minutes per person

W Apr 1 - 2nd project, 15 minutes per person

M Apr 6 - workday

W Apr 8 - workday

M Apr 13 - Show final project WIP

W Apr 15 - workday

M Apr 20 - workday

W Apr 22 - Final project due ... Final critiques, 22 minutes per person

M Apr 27 - Final critiques, 22 minutes per person

Final day: Final critiques, 22 minutes per person