



NYU

**TANDON SCHOOL
OF ENGINEERING**

Integrated Design & Media

DM-UY 3133 A

3D Animation

INSTRUCTOR INFORMATION

Name: Alex Sungkyu Koo

Academic Title: Adjunct Professor

Contact Information:

Phone no(s): 347-840-2411

Email address: Alex.koo@nyu.edu

COURSE INFORMATION

Course Title: 3D Animation

Course No.: DM-UY 3133 A

Program: Undergraduate 3D Animation

Days: Tuesday, Thursday Time: 8:00-9:50 am

Place of class meetings: 370 Jay Street Room 310

Credit hours: 3

Prerequisite courses/skills/other restrictions: DM-UY 2133 3D Modeling

COURSE OVERVIEW AND GOALS

This course is designed to teach advanced techniques, high level production pipeline techniques and tactics employed in the creation of an animated short. Students will, under the guidance of the instructor, integrate the skills they have already acquired in previous 3D classes to develop a story, script, cartoon character(s), and produce a completed animation short based upon the script with the character(s). Students will storyboard the script, create an animatic based upon the storyboards, through final animations, render composite, edit, and screen their animations.

Detailed Description:

In this course students learn the ins and outs of the CG production pipeline from pre-production, to production, to post-production, to final delivery. The primary goal is to create and screen a polished animated short. Students will learn to budget their time as they shift from pre production through post and will work within the time constraints and technological limitations at their disposal. The instructor's role in this course is to guide students through the pipeline, making them aware of and adhere to deadlines. In the professional world there can often be steep penalties for missing significant milestone deadlines and this class will operate as a real world example.

Students will employ any and all skills they have already acquired in modeling and texturing class and learn animation, lighting, rendering, and compositing to create an original short film. The stress in this class will be on short story delivery.

Every week during animation class, students will submit an updated animatic with play-blasts for critique. The animatic will show the status of the project: with each ensuing week, the play blasts should become more robust until the animatic starts looking like a final animation. Instructor input and direction will result from every screening.

Every week during post production, students will hand in updated renders for critique. These movies will show their progress and allow for final editing decisions. Similarly, all in-critique instructions will be considered as assignments to be carried out by the next critique.

UPON COMPLETION OF THIS COURSE, STUDENTS WILL BE ABLE TO:

- To create a performance-driven digital short with 3D animation
- To address the importance of storyboarding concepts in 3D animation production
- To convey advanced topics of shot construction and scene layout and planning

Student Learning Objectives:

- To be able to plan and execute an original 3D animation short of portfolio quality
- To apply knowledge gained in co-requisite courses

CLASS PARTICIPATION

[Insert description]

ASSIGNMENT/S:

1. Production of one film: 30-40 seconds(Focus is on narrative, clear staging, quality of motion and establishing a well-organized production pipeline). Projects can be mixed media. Students may use no more than two characters (max).

Alternatives to linear narratives and experimental animations are also encouraged but must be similarly manageable in terms of scope.

Final rendering must be delivered at HDTV 1080p (1920*1080) or 2K(2000*2000) pixel aspect square, 30 fps, interlacing none, compression none, audio 48 kHz sampling rate/ 16 bit stereo/ uncompressed. Students also submit a compressed version of their work(H264 / MP4).

USEFUL REFERENCES:

<https://www.maxon.net>

<https://www.youtube.com/c/maxontrainingteam>

<https://www.schoolofmotion.com>

<https://www.behance.net>

<https://motionographer.com>

<https://www.stashmedia.tv>

<https://www.artofthetitle.com>

GRADING OF ASSIGNMENTS

The grade for this course will be determined according to the following:

Assignments/Activities	% of Final Grade
Graded Checkpoints	40%
Midterm	20%
Final	30%
Professionalism and Attendance	10%

LETTER GRADES

Letter grades for the entire course will be assigned as follows:

Letter Grade	Points	Percent
A	4.00	Example: 92.5% and higher
A-	3.67	Example: 90.0 – 92.49%
B+	3.33	Example: 87.5% - 89.99%
B	3.00	Example: 82.5% - 87.49%
B-	2.67	Example: 80% - 82.49%
C+	2.33	Example: 77.5% - 79.99%
C	2.00	Example: 72.5% - 77.49%
C-	1.67	Example: 70% - 72.49%

D+	1.33	Example: 67.5% - 69.99%
D	1.00	Example: 62.5% - 67.49
D-	.67	Example: 60% - 62.49%
F	.00	Example: 59.99% and lower

HOW TO ACCESS YOUR GRADES

All Grades will be available in NYU Albert.

COURSE SCHEDULE

TOPICS AND ASSIGNMENTS

Week/Date	Topic	Assignment
[Week 1, Tuesday]	Introduction to course/syllabus Project Research	
[Week 1, Thursday]	Introduction to Maxon Cinema 4D Formatting "Production Note"	
[Week 2, Tuesday]	Introduction to Modeling	
[Week 2, Thursday]	Introduction to Modeling Developing Story	Assignment : Modeling an object.
[Week 3, Tuesday]	Introduction to Modeling with Sculpting	
[Week 3, Thursday]	Introduction to Shader / Texture Introduction to UV map and texturing	Assignment : Develop a simple 3D environment for Tuesday.

[Week 4, Tuesday]	Introduction to Environment Design using Shader / Texture	
[Week 4, Thursday]	Introduction to Object Rigging	Graded Checkpoint : Modeling / Texturing / Shading
[Week 5, Tuesday]	Introduction to Character Rigging	Assignment: Practice Character Rigging on pre-build 3D Models.
[Week 5, Thursday]	Adopting Character Rigging	
[Week 6, Tuesday]	Rigging Full body/Organic Creature	
[Week 6, Thursday]	Rigging - Binding Character with Full body Rig Facial Rigging	Assignment : Finalize Character Rig with 3D Object.
[Week 7, Tuesday]	Animation: Walk Cycle	Graded Checkpoint : Animation of a Full Walking Cycle
[Week 7, Thursday]	Animation: Walk Cycle / Lip Sync Midterm	Submit a Full Rigged Character Model. Submit a Completed Walking Cycle and layout in character and camera animation with the environment. Submit one 10 second playblast of developed animation.
[Week 8, Tuesday]	Camera and Layout Design	
[Week 8, Thursday]	Lighting Character Animation Introduction to Digital Lighting and Rendering	
[Week 9, Tuesday]	Introduction to Mograph	

[Week 9, Thursday]	Project Review	Graded Checkpoint : Scene Setup and Layout
[Week 10, Tuesday]	Introduction to Special Effects	
[Week 10, Thursday]	Project Review & Critique	
[Week 11, Tuesday]	Introduction to Xpresso	
[Week 11, Thursday]	Project Review & Critique	
[Week 12, Tuesday]	Introduction to Compositing and post effects.	
[Week 12, Thursday]	Project Review & Critique	Graded Checkpoint : All animation is completed. 80% of rendering is completed. Present movie of all scenes play-blasted.
[Week 13, Tuesday]	Color Correction and Editing for tuning scenes.	
[Week 13, Thursday]	Project Review & Critique All Rendering is completed.	
[Week 14, Tuesday]	A full Post-production with simple sound composite is completed.	
[Week 14, Thursday]	Final Project Submitted.	

COURSE MATERIALS

EXPECTATIONS FOR WORK OUTSIDE THE CLASSROOM

Students should expect to spend roughly 5 hours each week on supplemental work in this course. This may include reading assignments, writing, exam preparation, research, homework assignments, building, writing code, study time, unsupervised lab work, unsupervised group work, etc.

OPTIONAL TEXTBOOKS & MATERIALS

- [Prepare to Board! Creating Story and Characters for Animation Features...](#)
- [The Noble Approach: Maurice Noble and the Zen of Animation Design](#)
- [The Master Course in High-End Blocking & Staging](#)
- [Hot Moves: The Science of Awesome](#)
- [Animator Friendly Rigging](#)
- [Creativity.Inc.](#)
- [The Animation Book](#)
- [Digital Lighting & Rendering](#)

RESOURCES

- **Access your course materials:** [3D Animation Spring 2024](#)
- **Databases, journal articles, and more:** [Dibner Library](#) (library.nyu.edu)
- **Assistance with strengthening your writing:** [NYU Writing Center](#) (nyu.mywconline.com)
- **Obtain 24/7 technology assistance:** [IT Service Desk \(NYU IT\)](#) (nyu.edu/it/servicedesk)

COURSE POLICIES

ATTENDANCE AND TARDINESS

3 absences will result in an automatic failure. Two absences will result in an automatic full grade deduction (ie. A becomes B). Two tardies equals one absence. You are tardy if you are late for class. Be present and on time. No exceptions.

LATE ASSIGNMENT

Homework assignments are given each week in class and are due at the beginning of class without exception. Failure to submit homework will affect your semester grade.

INCOMPLETE GRADE POLICY

Students are advised that incompletes are given only in cases of a documented emergency.

ACADEMIC HONESTY/PLAGIARISM

NYU Tandon School of Engineering Policies and Procedures on Academic Misconduct¹

- Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct.
- Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:
 - Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.

- Fabrication: including but not limited to, falsifying experimental data and/or citations.
- Plagiarism: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
- Unauthorized collaboration: working together on work that was meant to be done individually.
- Duplicating work: presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
- Forgery: altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.
- Excerpted from the [Tandon School of Engineering Student Code of Conduct](#)

ACADEMIC ACCOMMODATIONS

If you are a student with a disability who is requesting accommodations, please contact New York University's Moses Center for Students with Disabilities at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at <http://www.nyu.edu/csd>. The Moses Center is located at 726 Broadway on the 2nd floor.

If you are experiencing an illness or any other situation that might affect your academic performance in a class, please email the Office of Advocacy, Compliance and Student Affairs: eng.studentadvocate@nyu.edu.

STATEMENT ON INCLUSION

The NYU Tandon School values an inclusive and equitable environment for all our students. I hope to foster a sense of community in this class and consider it a place where individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations, and abilities will be treated with respect. It is my intent that all students' learning needs be addressed, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. If this standard is not being upheld, please feel free to speak with me.