

Digital Design 307 - Advanced Maya

Professor TBA

Meets: TBA
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Course description:

In this class students will explore the animation program Maya to a far deeper extent than previously experienced in its pre-requisite class Introduction to Maya. Students will explore rigging, animating and rendering their own animation short, as well as developing techniques in lighting, skinning, texturing and painting their creations.

Course objectives:

Students who successfully complete this course will have working knowledge of:

- The Maya Interface
- Animation Hardware Basics
- Manipulating Views
- Manipulating the Maya Interface
- Basic Scene organization
- Working with surfaces
- Modeling with Polygons
- Modeling with NURBS
- Modeling from existing objects
- Working with lights
- Working with cameras & views
- Painting Maya objects
- Applying forces & constraints to animated objects
- Creating soft-body dynamics

Credit Hours:

3 hours

Pre-requisites:

- DD101: Introduction to the Digital Toolbox
- DD102: Media Design in the Digital Age
- DD107: Concepts in Animation
- DD113: Introduction to Motion Graphics
- DD205: 3D Design
- DD207: Introduction to Maya

Required Reading:

Introduction to Computer Graphics & 3D by Dariush Derakhshani

Strongly suggested:

This class has been designated as web-enhanced. Many of the required tasks will be performed on-line. In addition, many of the research assignments will require the use of library databases. It would be an advantage if students had:

- Familiarity with the Internet;
- Access to the Internet from home or elsewhere
- An active email account.

Due dates:

Late assignments will not be accepted without a physician or counselor's note.

Grading:

Final Project	45
Exercises	35
Participation	20
Total	100

Grades:

90-100	A
80-89	B
70-79	C
60-69	D
0-50	F

There is no R grade in this course.

Advanced Maya (AMY) assignments:

This course will be an organic mix of lecture and practice with the professor working to explain the concepts, give examples, and also oversee how well students grasp the concepts discussed as they work on assigned projects. There will be seven exercises and one major project spread over the course of 15 weeks.

Assignment	Type	Date	Graded Points
Texture Exercise	Studio/ Take-home	E1	5
Animated Ball Exercise	Studio/ Take-home	E2	5
Axes of Terror Exercise	Studio/ Take-home	E3	5
Mechanism Movie Exercise	Studio/ Take-home	E4	5
Character Walk Cycle Exercise	Studio/ Take-home	E5	5
Character Hand Exercise	Studio/ Take-home	E6	5
Reanimating the Locomotive	Studio/ Take-home	E7	5
Final Project	Studio/ Take-home	P	45
Total			80

Notes on the grading criteria:

Work will be evaluated according to the following criteria:

- Mastery of the concepts
- Understanding of issues introduced
- Originality of approach
- Presentation
- Participation

The AMY assignments:

What follows are brief descriptions of the AMY projects students will undertake over the course of the term. Detailed instructions will be provided in-class by the instructor. Without a physician or counselor's note, late assignments will not be accepted and so will receive a grade of 0.

Texture Exercise: revisit the axe you built for the Nurb Axe Exercise in DD207 Introduction to Maya and apply a texture as explained in chapter 7. Create another object of your choosing to go with axe (suggestions might include a tree stump, piece of fruit, or wooden outhouse), and texture them realistically.

Animated Ball Exercise: Follow along with the exercise in Chapter 8 of Derakhshani to create an animated ball. Once you have completed and rendered this file, revisit and put your own 'spin' on the project. Present both animations for review.

The AMY assignments continued:

Axes of Terror Exercise: Follow along with the exercise in Chapter 8 of Derakhshani to create an animated axe and target. Once you have completed and rendered this file, replace the axe and target with your objects from the previous texture exercise. Present both animations for review.

Mechanism Movie Exercise: Follow along with the final three exercises in Chapter 8 of Derakhshani to create and render three separate animations. These should be title sequence, a moving steam engine sequence (resurrect the locomotive that you built for DD207 Introduction to Maya), and an animated catapult sequence which you will then edit together in iMovie or Final Cut to produce a short Quicktime movie for presentation to the class.

Character Walk Cycle Exercise: Create your own version of the block man introduced in Chapter 9 of Derakhshani paying close attention to hierarchy, and naming schemes. Create a Walk Cycle for the your character. Present for review.

Character Hand Exercise: Create hands for our character and adapt the hand rigging and binding exercise in Chapter 9 of Derakhshani to your character's hands. Present for review.

Reanimating the Locomotive: Once again resurrect the locomotive that you built in DD207 Introduction to Maya, and follow along with the application exercise on Chapter 9 of Derakhshani (page 317) to rig and animate the loco.

Final Project: In this project students are asked to develop a short 20-30 second animation featuring the character they've developed earlier in the term in an original setting exhibiting concepts and techniques learned in the class.

Participation:

A student's participation grade is based primarily on their attendance and participation in class. Every student begins the term with 20 participation points. Attendance is mandatory for every single scheduled class. For each class missed, 7 participation points will be deducted. Tardy students will have 2 participation points deducted. More than three absences amount to a failure, as a student may not earn less than 0 participation points.

Academic policies (from Catalogue):

Hostos Community College believes that developing a student's abilities to think through issues and problems by themselves is central to the educational process. Since the Hostos College degree signifies that the student knows the material s/he has studied, and the practice of academic dishonesty results in grades or scores that do not reflect how much or how well the student has learned, understood, or mastered the material, the College will investigate any form of academic dishonesty brought to its attention. If the charge of academic dishonesty is proved, the College will impose sanctions. The three most common forms of academic dishonesty are cheating, plagiarism, and bribery.

Ethical Use of Content

Students are advised to exercise caution in using digital material downloaded from the Internet in producing their own educational multimedia projects, because there is a mix of works protected by copyright and works in the public domain on the network. Access to works on the Internet does not automatically mean that these can be reproduced and reused without permission or royalty payment and, furthermore, some copyrighted works may have been posted to the Internet without authorization of the copyright holder.

Fair use guidelines for educational multimedia

Students may incorporate portions of lawfully acquired copyrighted works when producing their own educational multimedia projects for a specific course.

General guidelines include:

- Up to 10% or 3 minutes, whichever is less, in the aggregate of a copyrighted motion media work may be reproduced or otherwise incorporated as part of a multimedia project.
- Up to 10% or 1000 words, whichever is less, in the aggregate of a copyrighted work consisting of text material may be reproduced or otherwise incorporated as part of a multimedia project created under Section 2 of these guidelines. An entire poem of less than 250 words may be used, but no more than three poems by one poet, or five poems by different poets from any anthology may be used. For poems of greater length, 250 words may be used but no more than three excerpts by a poet, or five excerpts by different poets from a single anthology may be used.
- Up to 10%, but in no event more than 30 seconds, of the music and lyrics from an individual musical work (or in the aggregate of extracts from an individual work), whether the musical work is embodied in copies, or audio or audiovisual works, may be reproduced or otherwise incorporated as a part of a multimedia project. Any alterations to a musical work shall not change the basic melody or the fundamental character of the work.
- The reproduction or incorporation of photographs and illustrations is more difficult to define with regard to fair use because fair use usually precludes the use of an entire work. Under these guidelines a photograph or illustration may be used in its entirety but no more than 5 images by an artist or photographer may be reproduced or otherwise incorporated as part of an educational multimedia project. When using photographs and illustrations from a published collective work, not more than 10% or 15 images, whichever is less, may be reproduced or otherwise incorporated as part of an educational multimedia project.
- Up to 10% or 2500 fields or cell entries, whichever is less, from a copyrighted database or data table may be reproduced or otherwise incorporated as part of a educational multimedia project created under Section 2 of these guidelines. A field entry is defined as a specific item of information, such as a name or Social Security number, in a record of a database file. A cell entry is defined as the intersection where a row and a column meet on a spreadsheet.

Students are reminded to credit the sources and display the copyright notice © and copyright ownership information if this is shown in the original source, for all works incorporated as part of the educational multimedia projects. Crediting the source must adequately identify the source of the work, giving a full bibliographic description where available (including author, title, publisher, and place and date of publication). The copyright ownership information includes the copyright notice (©, year of first publication and name of the copyright holder).

Cheating (from Catalogue):

In the collegiate setting, cheating is defined as the purposeful misrepresentation of another's work as one's own. Faculty and students alike are responsible for upholding the integrity of this institution by not participating either directly or indirectly in act of cheating and by discouraging others from doing so.

Plagiarism (from Catalogue):

Plagiarism is a form of cheating which occurs when persons, even if unintentionally, fail to acknowledge appropriately the sources for the ideas, language, concepts, inventions, etc. referred to in their own work. Thus, any attempt to claim another's intellectual or artistic work, as one's own constitutes an act of plagiarism.

Bribery (from Catalogue):

In the collegiate setting, bribery involves the offering, promising, or giving of items of value, such as money or gifts, to a person in a position of authority, such as a teacher, administrator, or staff member, so as to influence his/her judgment or conduct in favor of the student. The offering of sexual favors in exchange for a grade, test score, or other academic favor, shall be considered attempted bribery. The matter of sexual favors, either requested or offered, in exchange for a grade, test score or other academic favor, shall also be handled as per the Sexual Harassment procedures of the College.

College attendance policy (from Catalogue):

Students are expected to attend all class meetings in the courses for which they are registered. Classes begin at the times indicated in the official schedule of classes. Arrival in class after the scheduled starting time constitutes lateness.

The maximum number of absences is limited to 15% of the number of scheduled class hours per semester and a student absent more than the indicated 15% is deemed excessively absent. Attendance is monitored from the first official day of classes. In the case of excessive absences or lateness, the instructor has the right to lower the grade, assign a failing grade, or assign additional written work or readings.

Absences due to late registration, the instructor will consider change of program, or extenuating circumstances on an individual basis. Each department and program may specify in writing a different attendance policy. Instructors are required to keep an official record of student attendance and inform each class of the College's or department attendance policy.

NOTE:

- Any work missed during any period of absence must be made up by the student.
- To meet financial aid criteria, a student must attend class at least once in the first three weeks and once in either the fourth or fifth week of class.

Course schedule:

Readings must be completed for each class. Not all assigned texts will be discussed in class or covered in the class lectures.

CLASS	WHAT IS DUE	ROOM	TOPIC	READ FOR CLASS
1		TBA	Discussion: Class Introduction Maya Review	No Reading
2		TBA	Discussion: Shade & Texture	Derakhshani Chapter Seven: Maya Shading & Texturing
3	E1	TBA	Discussion: Exercise review Animating objects	Derakhshani Chapter Eight: Introduction to Animation (p.237-246)
4	E2	TBA	Discussion: Exercise review Animating Objects Replacing Objects	Derakhshani Chapter Eight: Introduction to Animation (p.246-263)
5	E3	TBA	Discussion: Exercise review Animating text Rigging	Derakhshani Chapter Eight: Introduction to Animation (p.264-277)
6	E4	TBA	Discussion: Exercise review Skeletons & Kinematics	Derakhshani Chapter Nine: Further Animation Practices (p.280-291)

7	E5	TBA	Discussion: Exercise review Inverse Kinematics	Derakhshani Chapter Nine: Further Animation Practices (p.292-304)
8	E6	TBA	Discussion: Exercise review Constraints Set Driven Keys	Derakhshani Chapter Nine: Further Animation Practices (p.304-324)
9	E7	TBA	Discussion: Exercise review Lighting Final Project Concept Discussion	Derakhshani Chapter Ten: Maya Lighting
10		TBA	Discussion: Rendering Project Scene Review	Derakhshani Chapter Eleven: Maya Rendering
11		TBA	Discussion: Dynamics Project Lighting Review	Derakhshani Chapter Twelve: Maya Dynamics
12		TBA	Discussion: Project Character	No Reading
13		TBA	Discussion: Project Reviews	No Reading
14		TBA	Work Day	No Reading
15	P	TBA	Final Project Presentation & Critique	No Reading

COURSE ID	-
PASSWORD	-