



COURSE OUTLINE : ART 234
D Credit – Degree Applicable
COURSE ID 001093
Cyclical Review: September 2020

COURSE DISCIPLINE : ART
COURSE NUMBER : 234
COURSE TITLE (FULL) : Advanced 3D Character Set-Up
COURSE TITLE (SHORT) : Adv 3D Character Set-Up
ACADEMIC SENATE DISCIPLINE: Art

CATALOG DESCRIPTION

ART 234 provides students with advanced training in 3-D character set-up techniques in Autodesk Maya. Skills covered include binding of the character using joints and influence objects, installation and modification of an advanced skeleton, the creation of blendshape targets, and facial animation control system. The student will be encouraged to design a character set-up and test it for use in an animated scene.

CATALOG NOTES

Note: Current industry standard digital animation software will be used.

Total Lecture Units: 2.00

Total Studio Units: 1.00

Total Course Units: 3.00

Total Lecture Hours: 36.00

Total Studio Hours: 36.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 72.00

Total Out-of-Class Hours: 90.00

Prerequisite: ART 233 or equivalent.



ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	ART	233	Character Set-Up/Kinematics	Install, label, orient, and use joints inside a character skin;	Yes
2	ART	233	Character Set-Up/Kinematics	bind the skin of a character to the joint hierarchy and edit skin weighting;	Yes
3	ART	233	Character Set-Up/Kinematics	install, label, and use IK handles and pole vector constraints;	Yes
4	ART	233	Character Set-Up/Kinematics	set up the reverse foot control system;	Yes
5	ART	233	Character Set-Up/Kinematics	establish set driven key relationships.	Yes

EXIT STANDARDS

- 1 Bind the skin of a character using both joints and influence objects;
- 2 create error-free skin weighting;
- 3 create complex IK systems;
- 4 create blendshape targets and set up a facial animation control system;
- 5 use mel scripting to set up custom character control windows;
- 6 set up biped or quadruped characters;
- 7 test a character system thoroughly to determine if it is ready for use by an animator.

STUDENT LEARNING OUTCOMES

- 1 Set up an advanced 3-d character for animation
- 2 Use advanced 3-D character set-up software tools

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Studio	Total Hours
1	Advanced Binding of Skin • Small weights • The component editor • Impact of influence objects on mesh • Weight mapping problems • Set-driven-key	9	0	9
2	Advanced Skeletal Setup • Analysis of kinetic hierarchy • Placement and orientation of joints • Installation of IK controls and reverse foot • Poses and animation clips	9	0	9



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3	Mel Scripting • Custom user interface windows • Attribute sets for interface windows • Character sets • Commands and workflow	9	0	9
4	Creating the Facial Animation System • The blendshape node • The head within the deformation hierarchy • Blendshape targets • Strategies for blendshape node interaction • The facial animation system	9	0	9
5	Projects Emphasizing Technical and Aesthetic Development	0	36	36
				72

OUT OF CLASS ASSIGNMENTS

- 1 drawing of a skeleton inside a three dimensional digital character mesh;
- 2 weighting of the skin of a character mesh with respect to the skeleton;
- 3 creating animation control systems;
- 4 performing animation tests.

METHODS OF EVALUATION

- 1 projects and assignments;
- 2 midterm and final examinations;
- 3 final project.

METHODS OF INSTRUCTION

- Lecture
- Laboratory
- Studio
- Discussion
- Multimedia
- Tutorial
- Independent Study
- Collaboratory Learning
- Demonstration



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- Field Activities (Trips)
- Guest Speakers
- Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	ISBN	Date
Maya Learning Channel		YouTube. YouTube, n.d. Web		electronic			2020