



Project Description

Students should work in pairs or teams of three to create a short (5-second) animation that makes use of the full 3D CG pipeline: modeling, rigging, surfacing, animation, lighting, effects animation, rendering, and compositing. Although aesthetics plays a role in assessment of the final result the primary emphasis is on demonstrating basic understanding and skill competency with each discipline.

Story Specifications

The rendered animated short must have a running time of 5 seconds and follow the actions of a simple interaction between a character and a prop in a simple environment. A narrative, in the classic sense, is not required, but will contribute a minor amount to the final grade.

Technique Specification

The short animation must include the following technical elements:

- Modeling [DUE Tuesday, 9/6]
 - (1) non-articulated hard surface
 - (1) articulated character -robot, doll, or insect -with at least one deformable surface.
 - (1) environment including ground plane, mid-ground objects, and far-distance cards.
- Rigging [DUE: Thursday, 9/8]
 - Scripted build for simple control rig for animation of the hard-surface prop.
 - Scripted build for motion and control systems using both forward- and inverse-kinematics on the character model.
- Animation [DUE: Tuesday, 9/13]
 - (1) non-articulated hard surface performing a simple, physically accurate action.
 - (1) articulated character -robot, doll, or insect - with at least one deformable (soft) surface performing a physically accurate complex action that includes elements of personality.
- Surfacing [DUE: Thursday, 9/15]
 - Use of both painted and procedural textures.
 - One metal material, one wood material, and one flesh material.
- Lighting [DUE: Tuesday, 9/20]
 - Use of key, rim, and fill lighting.
 - Use of image-based lighting.
- Effects Animation [DUE: Thursday, 9/22]
 - Use of two of the following: cloth, hair, smoke, fluid, sparks, dust, rigid bodies.
- Rendering [DUE: Tuesday, 9/27]:
 - Use of all of the following: motion blur, render layers, and depth of field.
- Completed Project [DUE Monday, 10/4]

The completed short should be delivered as a movie file in H.264 format playable at 24 or 30 fps. The aspect ratio of movie files should be 1.33 or 1.66 for pre-production elements, and 1.85 or 2.35 for production elements. The smaller dimension of the movie file should be a minimum of 720 pixels.

The running time of the short must be 5 second –no more, and no less. There must be a 3-second slate at the beginning of the short indicating (1) student name; (2) course number; and (3) semester. There must be a 2-second slate at the end of the short indicating (1) the year; (2) and the official Department of Visualization logo.

How Accomplishment is Measured

The 3D Boot Camp project will be assessed as individual grades per element plus an overall project grade. Each student will receive a grade for the elements over which he/she is responsible and a grade for the overall project. The final product will be presented one-week after the last stage is due. This opportunity affords a chance to improve the product of any or all aspects of the project for a percentage increase in grade.

- Modeling (100%):
(1) Visual references for prop; (2) Visual references for character; (3) Visual reference for the set; (4) Span direction; (5) General density; (6) Density in appropriate locations; (7) Form relative to known target; (8) Pose/Scale; (7) Turntable quality.
- Rigging (100%):
(1) Appropriate articulation point locations; (2) Appropriate number of articulation points; (3) Clear visual hierarchy of controls; (4) Clear top stack convention; (5) Clear naming convention; (6) Use of IK and FK; (7) Demonstration quality.
- Surfacing (100%):
(1) Visual references for prop; (2) Visual references for character; (3) Visual fidelity of the textured surfaces; (4) Use of multiple maps to create a variety of visual elements in the surface; (5) Appropriate scale of the textures relative to the object; (6) Appearance similarity relative to known materials; (7) Turntable quality.
- Animation (100%):
(1) Performance/action reference; (2) Weight; (3) Timing; (4) Acting; (5) Believability; (6) Visual quality of presentation.
- Lighting (100%):
(1) Reference; (2) Use of all required light types; (3) Use of light fall-off; (4) Use of light color; (5) Control of light and shadow sides of elements; (6) Visual appeal.
- Effects Animation (100%):
(1) Reference; (2) Visual complexity of the movement of the simulated objects; (3) Visual fidelity; (4) Behavior resembles a known physical effect; (5) Visual quality of presentation.
- Rendering/Compositing (100%):
(1) Use of the layers; (2) Use of motion blur (3) Use of depth of field; (4) Edge quality; (5) Color management; (6) Image quality.
- Presentation/Participation (10%/10%):
(1) Verbal clarity; (2) Level of confidence; (3) Defines accomplishments; (4) Identifies weaknesses; (5) Responds to feedback.
- Completed Project (up-to 25% modifier)