**Project Description**

Each student is responsible for creating a short (5-second) animation that makes use of the full 3D CG pipeline: modeling, rigging, surfaced, 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 (soft) surface.

- **Rigging [DUE: Thursday, 9/8]**
  - Simple control rig for animation of the hard-surface prop.
  - Use of 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 action that includes elements of personality.

- **Surfacing [DUE: Thursday, 9/15]**
  - Use of painted or procedural textures.
  - One metal material, one wood material, and one flesh material.

- **Lighting [DUE: Tuesday, 9/20]**
  - Use of point, spot, and directional lights.

- **Effects Animation [DUE: Thursday, 9/22]**
  - Use of one of the following: cloth, hair, smoke, fluid, sparks, dust, rigid bodies.

- **Rendering [DUE: Tuesday, 9/27]:**
  - Use of motion blur plus one of the following: render layers or 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 seconds --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 two grades. One grade will include assessments of the pre-production assignments (modeling, rigging, surfacing) plus presentation/participation. The second grade will include the production assignments (animation, lighting, effects animation, rendering) plus presentation/participation. 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 (33.3%)**:
  1. Visual references for prop;
  2. Visual references for character;
  3. Span direction;
  4. General density;
  5. Density in appropriate locations;
  6. Form relative to known target;
  7. Pose/Scale;
  8. Turntable quality.

- **Rigging (33.3%)**:
  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 (33.4%)**:
  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 (22.5%)**:
  1. Performance/action reference;
  2. Weight;
  3. Timing;
  4. Acting;
  5. Believability;

- **Lighting (22.5%)**:
  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;

- **Effects Animation (22.5%)**:
  1. Reference;
  2. Visual complexity of the movement of the simulated objects;
  3. Visual fidelity;
  4. Behavior resembles a known physical effect;

- **Rendering/Compositing (22.5%)**:
  1. Use of the layers;
  2. Use of motion blur;
  3. Use of depth of field;
  4. Edge quality;
  5. Color management;

- **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)