



Overview

Students will be divided between two teams, each with team members spread across four locations (Texas A&M, UT-Dallas, AIB, and DATA). Each team will be tasked with developing an animated short using 3D computer graphics techniques. Team members must coordinate their efforts with both local and distant team members to achieve completion of the project within the scope of the semester. This work is part of a research project investigating the role of communication technology in contributing to technical and aesthetic problem solving among distributed teams. Students who do not wish to participate will be provided with other opportunities to complete the required coursework.

Technical Specifications

Completed projects must meet the following technical specifications:

- All imagery must be pre-rendered (no real-time projects);
- Running length must be 30-seconds, not inclusive of credits;
- Credits should not include substantial story or character exposition;
- Frame rate must be either 24 or 30 frames per second;
- Image aspect ratio should be a standard used in production;
- The minimum vertical dimension for final images is 720 pixels;
- Credits must include the names of team members, names of instructors, names of graduate assistants and be copyrighted to Texas A&M University, University of Texas at Dallas, Academy for International Education, and Design and Technology Academy.

Computer Graphics Components

Projects must include the following computer graphics components (going beyond these specifications requires instructor approval):

- Two articulated characters;
- One environment;
- A change in lighting (direction, intensity, or color);
- Two animated effects (fire, smoke, sparks, explosions, dust, etc.).

Story Theme

The following story guidelines are provided as a foundational context for each team to begin the development of detailed ideas. Consider these guidelines a framework for decisions about story tone, visual styling, and specific actions, conflicts, and events. The main theme is idealism meets cynicism, as explored in the story *The Ingenious Gentleman Don Quixote of La Mancha*, a classic of European literature written by Miguel de Cervantes in the early 17th century. The titular character, Don Quixote, is an idealistic knight whose imaginings are full of chivalry and romance. He inhabits a desolate and deceitful world in the company of a faithful and simple sidekick. The original story has spawned many works of both visual and literary art that may be mined for inspiration.

Team Structure and Production Departments

Teams will be divided equally, or nearly so, by the instructors. Initially, teams names are Team A, and Team B, though students are encouraged to come up with their own. The two teams are not competitors for grades or accomplishments. It is expected that all students will contribute to the success of both projects either directly or through sharing best practices, techniques, and critical feedback.

The production of projects is divided into specific tasks areas, hereafter called departments, corresponding to responsibilities within a typical 3D animation production pipeline. Each team members will be expected to take a primary responsibility within one department, and have secondary responsibilities within one or two other departments. Assignments to departments will be determined by the instructors with input from students based upon interests and skills. The departments are:

- *Story/Editorial* –responsible for maintaining the thematic intentions, flow, and cohesion of the narrative; establishes story “beats”; responsible for maintaining a current version of the combined work including

shot numbers and frame counts. Works closely with Art, Layout, Animation, and Compositing.

- *Pipeline* –responsible for establishing efficient workflows, tool use, and resource management. Works closely with all other departments.
- *Art* –responsible for establishing the visual look and feel of the project through reference and original imagery; responsible for creating artwork for characters, environments, and props used by other artists to complete their work. Works closely with Story, Modeling, Surfacing, and Lighting.
- *Modeling* –responsible for creating the geometry for all assets including characters, environments, and props. Works closely with Art, Layout, and Rigging.
- *Layout* –responsible for establishing the camera position and action for each shot; responsible for placing characters, environments, and props in blocking positions for each shot; responsible for creating miscellaneous models as needed. Works closely with Story, Modeling and Animation.
- *Rigging and Character Effects* –responsible for creating the motion, control, and deformation systems for characters and props; responsible for maintaining the efficiency of those systems when used by animators; responsible for creating hair, cloth, and flesh effects as needed. Works closely with Modeling, Animation, and Surfacing.
- *Animation* –responsible for creating the performance animation of characters and props. Works closely with Story/Editorial, and Rigging.
- *Surfacing* –responsible for texturing environments, characters and props. Works closely with Modeling, Rigging, and Lighting.
- *Lighting* –responsible for establishing the cinematic direction, color, and intensity of shading on characters, environments and props for each shot. Responsible for rendering each frames(s) for each shot. Works closely with Art, Animation, Surfacing, and Compositing.
- *Effects Animation* – responsible for creating the dynamic behavior and look of explosions, gases, dust, flames, and other visual elements that exhibit highly complex behaviors. Works closely with Lighting and Compositing.
- *Compositing* –Responsible for combining rendered elements into a single image, and sequence of images, representing a cohesive view for each shot and sequence of shots. Includes responsibility for conforming images to correct output aspect ratio, color, and black levels. Works closely with Lighting, Effects Animation, and Editorial.

Student participants from each location will be assigned to each department except for Effects Animation due to limited student availability at DATA. Leads for each department will be determined by instructors. Though departmental work will occur across the production locations the lead instructor and student lead for each department is expected to be at the following locations:

- AIB –Story/Editorial, Art, Modeling, Layout
- A&M – Pipeline, Rigging/Character Effects, Animation
- UT-Dallas – Surfacing, Lighting, Compositing
- DATA – Effects Animation

Agile Development

The production process will follow an agile methodology, adopted from the games industry, known as Scrum. The key value to Scrum is the capacity to continually develop and evaluate all aspects of the work during the production process rather than concentrating efforts in a sequential manner. In animation production, utilizing Scrum means all departments will be committed producing a playable edit of the projects every two-to-three weeks. After each Sprint to develop the next edit the results will be evaluated to determine the most important issues to accomplish during the next sprint.

Communication Technology

Completing the projects will require team members to closely coordinate their activities. Communication technology in the form of email, chat, video conferencing, and scheduling tools will be made available to the teams. Some tools will be teams specific and some channels of communication will be department specific. Details about the tools will be provided in another document.