Faith Christian Academy: 3D Animation

Syllabus Updated 2015-05-14

**Course Description:** Create animations & recreations in 3D using Blender. Learn about 3D cinematography (virtual camera technique), 3D simulation, creature rigging, & mechanical rigging.

**Instructor**: Jake Gustafson, 215-257-4577 x3328, jgustafson@my-fca.com

**Materials Used**: “Using Blender 2.7 for Animation” written by Jake Gustafson (17 yrs. animation exp. in various software); Example animations & video tutorials by Blender Foundation team & various other animators; Public domain and free-licensed objects, imagery & sounds, for use in projects.

**Software Used**: Blender a free, community-driven open-source program used in many independent films worldwide. For free short films by the Blender Foundation, see “Big Buck Bunny” and “Sintel” on YouTube, or Play store on Android.

**Goals**: Gain a foundation in 3D modeling & animation tools & techniques, to create prepare for further education in software which is used in similar ways for cinema, commercial product visualization, engineering simulation, forensic simulation, & interactive media.

**Grading**: Regular assignments for each part are worth 10 points and generally involve mastering one tool or technique in one week. Creative projects, which require a combination of tools and techniques (& sometimes two weeks) are worth 20pts. Each quarter has about 100pts, so each project is worth about 10% or 20% of the grade for that quarter.

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| **Point Value** | **Part & Name** | **Due** | **Quarter** |
| 10 | Part 1: Location Keyframes |  | 1 |
| 10 | Part 2: Point of Reference |  | 1 |
| 10 | Part 3: Text and Indirect Lighting |  | 1 |
| 10 | Part 4: ChildOf & Properties |  | 1 |
| 10 | Part 5: Booleans |  | 1 |
| 10 | Part 6: Fluid Simulation |  | 1 |
| 10 | Part 7: Import Meshes |  | 1 |
| 10 | Part 8: Motion Blur |  | 1 |
| 10 | Part 9: Using a Premade Human Rig |  | 1 |
| 10 | Part 10: Whole Character Keyframes |  | 2 |
| 10 | Part 11: Walk Cycles |  | 2 |
| 10 | Part 12: Box Method Modeling |  | 2 |
| 10 | Part 13: Basic Creature Rigging |  | 2 |
| 10 | Part 14: Animating a Rigged Creature |  | 2 |
| 10 | Part 15: Particles |  | 2 |
| 10 | Part 16: 3D Sound Effects |  | 2 |
| 10 | Part 17: Dramatic Scene (sound grade) |  | 2 |
| 10 | Part 18: Dramatic Scene (animation grade) |  | 2 |
| 10 | Activity 1: Install filter and Import Minecraft World |  | 3 |
| 10 | Activity 2: Sculpt Mode with Automatic Subdivision |  | 3 |
| 10 | Activity 3: Clouds |  | 3 |
| 10 | Activity 4: Pivot Point & Screw Modifier |  | 3 |
| 10 | Activity 5: Extruding Curves (furniture using spline-based modeling) |  | 3 |
| 10 | Activity 6: Lofting & Textures |  | 3 |
| 10 | Activity 7: Lighting & Rendering Basics |  | 3 |
| 10 | Activity 8: Architectural Design |  | 3 |
| 20 | Activity 9: Architectural Visualization |  | 3 |
| 10 | Advanced 1: Physics and Controllers |  | 4 |
| 10 | Advanced 2: Render Physics with Materials |  | 4 |
| 10 | Advanced 3: Smoke Simulation |  | 4 |
| 10 | Advanced 4: City Scene with Fracture Simulation |  | 4 |
| 10 | Advanced 5: Terrain Using Proportional Editing |  | 4 |
| 10 | Advanced 6: Texture Paint |  | 4 |
| 10 | Advanced 7: Camera Animation (outdoor scenic tour) |  | 4 |
| 10 | Advanced 8: Dramatic Story Animation (story grade) |  | 4 |
| 10 | Advanced 9: Dramatic Story Animation (animation grade) |  | 4 |