Multimedia Tech 5-6 Program (third year)

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Course Outline and Syllabus

Course Description:

Students will learn about gaming engines to create simple games. They will also create characters with bones, constraints, walking, running and rigid cycles that can be used to be imported into Unity 3D. Also, students will learn about topology, retopology, texture baking and high to low resolution concerns in order to set up characters for gaming. The Media Standards will be used throughout the school year. These can be accessed through www.ade.state.az.us.

Software Resources: Blender, Maya, Unity 3D, UV-Mapper, Python (for introduction to scripting).
Equipment: iMacs, digital camcorders, DSLR Canon EOS 60D and Nikon D5100, external and wireless microphones, audio mixers, video-audio stock files (along with procedural textures), steady-cam, green-screen studio, green-blue fold up backgrounds, LED/halogen light sources, stabilizers, dollies, etc.
Textbooks: Blender Foundation, Blender wiki, CGCookie, Unity Cookie, Video Game Design Foundations by D.Michael Ploor, The Blender GameKit 2nd Edition.Beginning 3D Game Development with Unity by Sue Blackman.

2nd Year SYLLABUS:

- **1st Quarter: Students learn the Unity 3D interface to create a environment using layers, tags, setting limits, adding objects to inventory, FBX Importer, Parenting, Complex Hierarchies, colliders, camera tracking. Students must be able to import modeled buildings, add foliage, mountains and use the default 1st and 2nd person operators.**
- **2nd Quarter: Students model characters using the mirror modifier and use sculpting brushes for adding details. Low-poly and high-poly counts are explored and various topology concerns – especially regarding the head for correct eye and mouth muscle placements for shape morphs for future lipsync and animation concerns. Rigging and bone constraints are also touched upon.**
- **3rd Quarter: The Blender and Unity gaming engines are compared and students make a simple stickman game using the sensors, controllers and actuators for creating various behaviors and actions. Video tutorials are also used to help guide the students throughout the whole process.**
- **4th Quarter: Retopology and texture baking assignment followed by a rigging, bone constraint project. Students now import their figures complete with walking, running and rigid cycles. Afterwards, certain actions are implements where characters are involved with certain actions such as throwing, picking up or using particles to interact with targets for a simple game. Final projects are exported to create a stand-alone game that can be played on both macs and pcs.**

GRADING: Grades will be determined by several key rubrics to guarantee completion of coursework objectives, test scores and projects. Grades will be as follows: 90-100=A; 80-89=B; 70-79=C; 60-69=D; below 60=F. Students will be responsible for the completion of a midterm and final exam on multimedia and related terms.