

Glendale Unified School District

Middle School

November 4, 2014

Department: Career Technical Education (CTE)

Course Title: 3D Animation – Modeling and Video Game Creation

Course Number:

Grade Level: 6 - 8

Semester Credits: 5

Recommended Prerequisite: None

Recommended Textbook: Creating Games with Unity and Maya by Adam Watkins
Published by Focal Press © 2011

Course Description: This one semester course will introduce students to the methods and techniques involved in the creation of 3D animations, 3D models and Video Game Design and Publishing, and Computer Programming (as used in video games - Javascript, C#). The techniques and applications taught are used in numerous professional careers including: movies, video game design, film production, websites, engineering, graphic design, military simulations, and the entertainment industries.

- I. **Standards - Common Core State Standards - College and Career Readiness Anchor Standards for Technical Subjects**
- A. CCSS.ELA-LITERACY.RST.6-8.3
Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
 - B. CCSS.ELA-LITERACY.RST.6-8.4
Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6-8 texts and topics*.

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- C. CCSS.ELA-LITERACY.RST.6-8.9
Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

II. Sample Assessments

- A. Quizzes
- B. Homework
- C. Classroom Participation
- D. Cooperative Projects
- E. Projects printed on 3D Printer, animated, and video games created

III. Topic of Study - Suggested Time Distribution

- A. Principles and use of Digital Media in society 15%
 - 1. Changes in animation – video
 - 2. Different mediums for digital technology
 - 3. Where is the future going?

- B. Using Maya in a 3D World- Space 45%
 - 1. Coordinate system
 - 2. X, Y, Z space
 - 3. Animation
 - 4. 3D Printing
 - 5. Modeling
 - 6. Polygons VS Nurbs – what is the difference?
 - 7. Lighting
 - 8. Rendering

- C. Unity Video Game Engine 40%
 - 1. What is a video game?
 - 2. Using Variables
 - 3. X, Y, Z space in games
 - 4. Unity Video Game Engine Interface
 - 5. Bringing Maya 3D objects into your game
 - 6. Creating movement and obstacles in your game
 - 7. Javascript – C# programming for video games
 - 8. Publish and play your game

IV. Textbooks and Supplemental Reading Materials

- A. Getting Started in 3D with Maya: Create a Project from Start to Finish - Model, Texture, Rig, Animate, and Render in Maya by Adam Watkins from Focal Press
- B. Supplemental Materials
 1. http://curriculum.autodesk.com/student/public/level1/digital/software_id/3/category_id/
 2. My Website - <http://www.computergraphics.com>
 3. <http://unity3d.com>
 4. https://www.youtube.com/user/misterh3d?feature=em-subscriptions_digest