

## USD 233 – OLATHE DISTRICT SCHOOLS

Course Title: Level Design

Credit: ½

Grade Level: 11, 12

Course Length: 1 Semester

### **Course Description:**

This course provides a foundation in level design for 2D/3D games, including basic 2D/3D gameplay, audience and game analysis, story and scene development, basic 3D character AI and scripting, 3D texturing, 3D lighting, principles of sound in level design, and play testing for basic 3d games. Students will learn classic architecture for 2D/3D games, Optimization techniques for efficient level design visibility, play strategies, player interaction, terrain/outdoor environment design, and line of sight determination for 3D games.

**Prerequisites:** Intro to Gaming/Game Art Creation

**Instructional Materials:** Textbooks-3D Game Art “f/x & Design, (Textbooks are subject to change without notice)

Teacher designed mini projects, web site projects/lessons, software included lessons/tutorials/projects.

**Instructional Strategies:** Direct instruction, demonstration, graphic organizers, application exercises, projects, cooperative groups, case studies, guest speakers, DVD(s), videos, internet.

**Assessments:** Daily work performance, teacher observation, rubric, checklist, classroom discussion, projects, research relevant to topic, application performance, exams, conferencing, portfolio, written response, sketchbook, journaling, self evaluation.

### **Course Objectives:**

- Learn appropriate level design for specific purposes.
- Develop an understanding of basic level design development.
- Understand Basic Elements of level construction.
- Develop environment textures and low poly environments that show control of level design.
- Apply visual communications knowledge and skills to express ideas imaginatively.
- Use critical thinking, and problem solving to communicate ideas visually.
- Produce textured levels and environments that demonstrate basic knowledge of expository and narrative communication processes and level design.
- Develop skill in the use of techniques, procedures and level design concepts.

- Learn appropriate use of textures, construction, and lighting strategies to add impact and realism to a game level.

## **Course Content:**

### **I. Introduction to Level Design**

- Level Design Development
- Level Design Terminology
- Level Design Technology/Development

### **II. Level Design Production Process**

- Level Design Strategies
- Level Design Teams
- Level Design Work Flow

### **III. World Building**

- Level Construction
- Art and Technology
- Knowing the Levels Purpose
- Deciding on the World Setting
- Planning the World Level
- Level Development Cycle
- Mapping Your Levels
- Evaluate
- Criticism
- Value Rivalries
- Homework
- Framerates
- Deception
- Bad textures
- Blocky Construction
- Bad Lighting

### **IV. The Game World Editor**

- Intro to Genesis 3D
- Installing Genesis 3D
- Genesis 3D Features
- Texture Packer
- Texture Library
- The World Editor
- Orthographic Views

- Command Panel

## **V. Game World Geometry**

- Basic Brush Shapes
- Cube
- Sphere
- Cylinders
- Stairs
- Arches
- Cones
- Brush Types
- Solid Brush
- Hollow Brush
- Cut Brush
- Sheet Brush
- Brush Attributes
- Setting up GEDIT
- Textures
- The Grid

## **VI. Creating a Game World**

- World Creation
- Cubes
- Editing Modes
- Creating the First Room
- Testing the Map
- Adding a Courtyard
- Creating Groups
- Creating a Sky Box
- Adding Light
- Adding Banners
- Speed Tips

## **VII. Adding Models To Your World**

- Making Things Move
- Model Overview
- Models Tab
- Animation Options
- Entities
- Creating a Windmill
- Creating the Blades
- Animating the windmill

## **VIII. Lighting the World**

- Introduction to Lighting
- Default Light Level
- Ambient Light Level
- Basic Light Techniques
- Genesis Lights and Light Effects Entities
- Lighting Your Scene

### **METHODS OF EVALUATION OF COMPETENCIES:**

Evaluation of student mastery of course competencies will be accomplished using the following grading scale.

#### **Grading:**

A = 90 - 100%

B = 80 - 89%

C = 70 - 79%

D = 60 - 69%

F = 0 - 59%

#### **Extra Credit: The instructor must approve project.**

0-5 points is given for extra credit per approved project. Project must be finished and handed in on specified date at the beginning of class. Only four approved projects per semester allowed.