GAME 198: INTRODUCTION TO LEVEL DESIGN

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2026
Credits:	3
Total Contact Hours:	108
Lecture Hours :	36
Lab Hours:	72
Hours Arranged:	0
Outside of Class Hours:	72
Total Student Learning Hours:	180
Prerequisite:	GAME 197.
Strongly Recommended:	GAME 194.
Transferable to CSU:	Yes
Transferable to UC:	Yes - Proposed
Grading Method:	Standard Letter

Catalog Course Description

An introduction to the fundamental techniques, concepts, and vocabulary of computer game level design. Students will create environments, place objects in those environments, and control those objects via a scripting language. Topics include frame rate, game flow and pacing. Students will create 3D computer games using a game engine such as Unreal. No previous computer programming experience is required. 36 lecture hours, 72 lab hours.

Course Objectives

- Examine and illustrate various aspects that make a game fun and compelling.
- Demonstrate the concept of game “flow” and how to design levels to keep the user in a game flow state.
- Apply terrain, environment and lighting effects to add interest and challenges to level design.

Major Course Content

1. The Basics of Game Design
    a. Keeping the game “fun”
    b. System Design
        i. Gameplay
        ii. Designing Challenges
        iii. Pacing and Flow
2. Paper Design
    a. Ideas to Documentation
    b. Writing a Design Document
    c. Creating Maps
    d. Level designer’s role in the pre-production phase
3. Building Terrain
    a. Making Terrain
        i. Heightmaps
        ii. Handmade
        iii. Mixed
        iv. Making terrain fun
        v. Terrain and gameplay
    b. Terrain and Strategy
        i. Making Realistic Terrain
        ii. Terrain Props
    c. Texturing Terrain
4. Building Architecture and Spaces
    a. Toolsets
        i. Brushes
        ii. 3D Modeling software
        iii. Tilesets
    b. Designing your Environment
        i. Architecture
        ii. Occluders and Portals
        iii. Game Architecture Types
    c. Architecture and Fun
        i. Linear Gameplay
        ii. Non-Linear Gameplay
        iii. Tactics and Architecture
        iv. Texturing Architecture
            1. Seams
            2. Collision

Lab Content

Practicum Landscape Terrain Basics

1. Landscape
    a. Outdoor Terrain
    b. Landscape Brushes
    c. Landscape Copy Tool
    d. Landscape Manage Mode
    e. Landscape Splines
    f. Landscape Paint Mode
    g. Landscape Sculpt Mode
        i. Landscape Blueprint
        ii. Landscape Erosion Tool
        iii. Landscape Flatten Tool
        iv. Landscape Hydro Erosion Tool
        v. Landscape Mirror Tool
        vi. Landscape Noise Tool
        vii. Landscape Ramp Tool
        viii. Landscape Region Tool
        ix. Landscape Retopologize Tool
        x. Landscape Sculpt Tool
        xi. Landscape Smooth Tool

Practicum Lighting

1. Types of Lights
    a. Directional Lights
    b. Sky Light
    c. Point Lights
    d. Spot Lights
    e. Rect. Lights
2. Lumen Global Illumination

   a. Reflections
   b. Technical Detail
   c. Shadow Maps
3. Lighting Essentials
4. Features
5. Properties
6. Ray Tracing

Practicum Post Effects

1. Volumetric Fog
2. Using Transparency in Materials
3. Using Bump Offset

Practicum FX

1. Atmosphere Clouds
2. Sky Atmosphere
3. Volumetric Clouds

Practicum Assets

1. Importing
   a. File Selection / Import
   b. Content Browser
   c. Drag and Drop
2. Creating Assets
   a. Reference Assets
   b. Viewing Assets
   c. Copying Assets
   d. Managing Assets
      i. Edit
      ii. Duplicate
      iii. Save
      iv. Moving
      v. Deleting
   e. Migrating
   f. Consolidating

Practicum Actors

1. Defining Actors
2. Placing Actors
3. Selecting Actors
4. Transforming Actors
5. Actors Snapping
6. Actors Mobility
7. Grouping Actors
8. Merging Actors

Suggested Reading Other Than Required Textbook

Unreal Engine, ZBrush, Maya Software manuals, online resources for 3D modeling

Examples of Required Writing Assignments

1 to 2 page essay on Game Design theory as it pertains to level design and flow of game play.

Examples of Outside Assignments

Create a playable level in a game UNREAL engine or engine of choice

Instruction Type(s)

Lab, Lecture