GAME 195: CHARACTER DESIGN FOR GAME

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 192.
Transferable to CSU:	Yes
Transferable to UC:	Yes - Proposed
Grading Method:	Standard Letter

Catalog Course Description

This course provides continued study of the application of 3D modeling techniques within a computer animation environment. Students will learn the production work flow of Maya to ZBrush and complete game ready character models. The focus will be on character design principles, low poly modeling and the creation of both bipedal and quadruped characters. 36 lecture hours, 72 lab hours.

Course Objectives

- Analyze and understand iconic and functional Character Design Principles. F.A.A.T.S.
- Create 3D Character Models with proper topology for animation articulation.
- Analyze the comparative differences between topology for static meshes and Character Meshes for Animation

Major Course Content

1. Proper Topology for Animation
    a. Polygon Flow for Animation
        i. Polyflow for Organic Characters
        ii. Polyflow Articulation for Arms, Shoulders, and Legs
        iii. Polyflow Articulation for Toes and Fingers
2. Mechanical
    a. Polyflow for Hinge joint Characters
    b. Polyflow for Ball joint Characters
3. Zspheres I
    a. Armature Creation
    b. Subdivision
4. Symmetry (X,Y,Z)
    a. Mirrored
    b. Radial
5. UV Unwrapping
    a. Maya UV Texture Editor
        i. Automatic
        ii. Planar
        iii. Spherical
        iv. Cylindrical
6. ZBrush UV Master
    a. Polygroups Unwrap
    b. Symmetry Unwrapping
    c. Control Painting
7. Unified Skin Vs Adaptive Skin Resolution
    a. Smooth
    b. Intersection resolution
    c. Membrane Curvature
    d. Minimal Skin to Parent
    e. Minimal Skin to Child
8. Polygroups

Hiding or Isolating Polygons

1. Facial Modeling for Lipsyncing
    a. Muscle Structure related to Polyflow for facial articulation
2. Projection Master Vs Poly Painting
3. Blendshapes
4. Normal Creation

Lab Content

1. Practicum Character Topology
    a. Edge Flow
    b. Poly Routing for Animation Articulation
    c. Facial Topology Routing
2. Practicum Retopology - Topology
    a. Binding Mesh
    b. Edit Topology
    c. Adaptive Skin
    d. Edit Topology
    e. Select Topology
3. Practicum Adaptive Skin
    a. Preview
        i. Density
        ii. Resolution
    b. Classic Skinning
        i. Local Mesh
        ii. Connector Mesh
    c. Make Adaptive Skin
4. Practicum Alphas
    a. Textures
    b. Masks
    c. Brushes
5. Practicum Unified Skin
    a. Preview
    b. Resolution
    c. Smooth
    d. Polish Surface
6. Make Unified Skin

Suggested Reading Other Than Required Textbook

Maya Software manuals, online resources for 3D modeling ZBrush Training Manuels and Books

Examples of Required Writing Assignments

1 to 2 page essay on proper use of topology for animated characters focusing on Facial topology.

Examples of Outside Assignments

Create High Poly Character with Low Poly Character frame for Map transfer and Animation Proxy

Instruction Type(s)

Lab, Lecture