RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

Three-Dimensional Modeling - ARTS 129

I. Basic Course Information

A. Course Number and Title: Three Dimensional Modeling

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Year: Spring 2021

D. Effective Term: Fall 2021

E. Sponsoring Department: Arts and Design

F. Semester Credit Hours: 3

G. Weekly Contact Hours: 4 Lecture: 2
Laboratory: 2
Out of class student work per week: 5

H. Co-Requisite: ARTS106 Foundations of Game Engines

I. Laboratory Fees: NONE

J. Name and Telephone Number or E-Mail Address of Department Chair at time of approval:
Co-Chair Vandana Nadkarni vandana.nadkarni@raritanval.edu
Co-Chair John Sichel john.sichel@raritanval.edu
Patrice Marks Patrice.marks@raritanval.edu

II. Catalog Description

Co-requisite: ARTS 106 **Foundations of Game Engines**
This course affords students an immersion into the techniques used in creating three dimensional multimedia assets and incorporates them into interactive environments. Students will construct industry quality three dimensional objects, landscapes, interiors and character models.

III. Statement of Course Need

A. This course is fundamental for the rest of the Game Art program. It helps students create industry quality three dimensional assets which are the core to any modern game or interactive media experience. It is also valuable should a student wish to work professionally and is a requirement for most 3D art and Game Design degrees.
B. This course has a lab component that is required for students to work on both studio art and technology based game design. Students will be required to use computers, scanners, tablets, to perform tasks such as digital drawing and programming.

C. This course will generally transfer to institutions offering game and multimedia based design degrees. The skills used in this course will be required for transferring into any corresponding programs.

IV. Place of Course in College Curriculum

A. Free Elective
B. This course meets a program requirement for the A.S. Game Art degree.
C. To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, www.njtransfer.org; b) for all other colleges and universities, go to the individual websites.

V. Outline of Course Content

A. Technology and Technique Overview
1. 1. The History of 3D Modeling
   a. Sculpture
   b. Drawing
   c. Film and Television
   d. Video Game
   e. Historical reconstruction
   f. Virtual and Augmented Reality
2. Concepts
   a. Objects in 3D space
   b. Navigating 3D spaces
   c. Human and Animal Figures

d. Landscapes
e. . Sketching and wireframes

B. Applied Art Technique

1. Three Dimensional Modeling Engine
    a. Basics
    b. Object creation and transformation
    c. Lighting
    d. Shading
    e. Textures

C. Interaction

1. Mapping three dimensional spaces
2. Object-world interaction
3. Gravity and physics
4. Figurative movement
5. Secondary motion
6. Character movement and navigation
7. Interior spaces
8. Landscapes

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes:

At the completion of the course, students will be able to:

1. Apply appropriate technological tools to design projects. (GE-NJ 4,6 *)
2. Reference three dimensional modeling sources and their importance in the development of modern games and multimedia. (GE-NJ 1,6)
3. Demonstrate the application of analysis and problem solving to achieve design solutions. (GE-NJ 4, *)

B. Course Learning Outcomes:

At the completion of the course, students will be able to:

1. Produce professional quality assets for game and interactive media
2. Assess how three dimensional models become assets for a larger interactive environment.

C. Assessment Instruments:

1. Sketching and planning
2. Digital 3D projects

3. Research papers and presentations
4. Exams

**Embedded critical thinking*

VII. Grade Determinants

A. Art/Computer Design Projects
B. Technical Exercises
C. Exams
D. Research Papers and presentations

Grade Formats, Mode Determinants

A. Computer based studio art work
B. Lecture
C. Research
D. Online tutorials

VIII. Texts and Materials

A. suggested textbook
B. instructor hand outs
C. art examples
D. game design examples
E. web video
F. online learning resources (Lynda.com, etc…)

IX. Resources

A. MAC and PC workstations
B. Three dimensional game development software
C. Digital drawing tablets
D. Adobe creative cloud software
E. Unity game engine
F. Paper drawing tablet, pencils and other art supplies

X. Honors Option

N/A