

GID 68B: VIRTUAL REALITY GAME DESIGN

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2023
Units:	4
Hours:	3 lecture, 3 laboratory per week (72 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Conceptualizing a VR game, including an interface, environment, and/or character.
- Proficiency with industry standard game software to prototype a virtual reality game

Description

Learn how to design virtual reality (VR) games and immersive experiences. Students are introduced to conceptual theory, design techniques, and project management skills for building successful VR games and immersive experiences. Topics include ideation, concept development, character design, environment design, 3-D animation, and sound and lighting design for VR games and immersive experiences. Students complete hands-on projects that progress through the phases of designing VR games and immersive experiences, from ideation through to final production, while developing proficiency with professional software for VR game and immersive experience design.

Course Objectives

The student will be able to:

- Explain the difference between virtual reality (VR) games and video games
- Describe how a player interacts with a VR game
- Conceptualize a VR game
- Create a VR game interface
- Build a 3-D game environment
- Animate a 3-D character
- Use industry standard game software to prototype a virtual reality game

Course Content

- Compare virtual reality (VR) games and video games
- Playing VR games
 - Sources of inspiration
 - What game genres work with VR
 - The importance of presence
- User interface in VR games

- Human computer interaction
- First person vs. third person
- Stereoscopy
- VR worlds
- Movement
 - Free roaming
 - Vehicular
- Tracking
- 3-D game mechanics for VR games
- 3-D assets for VR games
 - Making assets with 3-D modeling software
 - Exporting assets from 3-D modeling software
 - Acquiring existing assets
- Animating 3-D assets
- Creating worlds
 - Walkthroughs
 - 360-degree media
- Building VR games with game software
 - Unity
 - Unreal
 - Others

Lab Content

- Comparing virtual reality (VR) games and video games
- Exploring VR game genres
- Experimenting with VR devices
- Computer skills for creating 3-D models
- Importing 3-D models
- Computer skills for animating 3-D models
- Computer skills for creating worlds
- Computer skills for assembling VR games

Special Facilities and/or Equipment

- A lecture room equipped with instructional computer, high resolution color monitor, software; projection system and lighting suitable for displaying projected media.
- An integrated or separate facility with student workstation configurations to include hard drives, color monitors, mice, keyboards, and software.
- When taught via Foothill Global Access: on-going access to computer with JavaScript-enabled internet browsing software, media plug-ins, and relevant computer applications.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Projects
 Computer assignments
 Collaborative student work
 Oral presentations

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lectures on technical and theoretical concepts in virtual reality game design
Demonstration of virtual reality hardware
Group discussions that address the creative problem solving process
Presentation and in-class discussion of assets and prototypes
Demonstration of virtual reality game software and technique

Representative Text(s) and Other Materials

Linowes, Jonathan. Unity Virtual Reality Projects. 2015.

This text is older than the suggested "5 years or newer" standard, but it is still the best choice for this course.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- a. Weekly reading assignments from text and outside sources ranging from 30-60 pages per week
- b. Review of handouts and relevant reading material
- c. Research and planning of individual creative projects
- d. Project progress reports

Discipline(s)

Graphic Arts or Computer Information Systems