GID 68A: INTRODUCTION TO VIRTUAL REALITY DESIGN

Foothill College Course Outline of Record

Heading	Value
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

- Create a plan for a virtual reality project that includes: technical considerations and limitations for a chosen type of virtual reality immersive experience.
- Use industry standard virtual reality software to create assets for virtual environments and a virtual reality prototype.

Description

Introduction to the core principles and foundations of design for virtual reality (VR) and immersive experiences. Students will learn theory, techniques and processes for design and development of successful VR and immersive experiences. Hands-on projects provide opportunities for creating VR animation, 3-D objects, environments and interfaces while exploring issues in design and development for VR and immersive devices. Students will develop proficiency with professional software for VR design and development.

Course Objectives

The student will be able to:
A. Explain differences in types of virtual reality
B. Compare virtual reality immersive experiences
C. Discuss technical considerations and limitations
D. Research and plan virtual reality projects
E. Create assets for virtual environments
F. Create virtual reality prototypes
G. Use industry standard virtual reality software and tools for prototyping

Course Content

A. Defining Virtual Reality (VR) Experiences
B. History of VR
C. Types of VR
1. Fully Immersive
2. Non-immersive
3. Collaborative
4. Web-based
D. Equipment
1. Tracking Systems
a. 3 DOF (degrees of freedom), Mobile Phones
b. 6 DOF (degrees of freedom), Computers
2. Headsets
a. Optics
b. Displays
3. Controllers
E. Applications
1. Education
2. Medicine
3. Architecture
4. Entertainment
5. Games
F. Content Creation
1. Storytelling
2. Filmmaking
3. Live Action
4. Game Engines
G. Development Platforms
H. Asset Creation
1. Environments
2. 3-D Models
3. Animation
4. Lighting
5. Sound

Lab Content

A. Project planning
B. Sketching
C. 3-D modeling
D. Environment design
E. Animation
F. Prototyping
G. Testing

Special Facilities and/or Equipment

A. 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.
B. When taught via Foothill Global Access: on-going access to computer with java-script enabled Internet browsing software, media plug-ins, and relevant computer applications.

Method(s) of Evaluation

A. Projects
B. Computer Assignments
C. Collaborative Student Work
D. Oral Presentations

Method(s) of Instruction

A. Lectures on technical and theoretical concepts in virtual reality and immersive experiences.
B. Demonstration of virtual reality devices.
C. Group discussions that address the creative problem solving process.
D. Presentation and in-class discussion of prototypes, assets, and projects.
E. Demonstration of virtual reality software and technique.

Representative Text(s) and Other Materials

Jerald, Jason. The VR Book: Human Centered Design for Virtual Reality. Morgan and Claypool Publishers, 2016.

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 to 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, Computer Information Systems