VCIM-2171: VIRTUAL REALITY VIDEO AND ANIMATION

Cuyahoga Community College

Viewing: VCIM-2171 : Virtual Reality Video and Animation

Academic Term:
Fall 2020

Subject Code
VCIM - VC-Interactive Media

Course Number:
2171

Title:
Virtual Reality Video and Animation

Catalog Description:
Introduction to digital video, digital audio, animation and presentation graphics emphasizing technical and aesthetic fundamentals of Virtual Reality Video. Exploration of 180 degree, 360 degree, 2D and 3D video and animation for Virtual and Extended Reality.

Credit Hour(s):
3

Lecture Hour(s):
2
Lab Hour(s):
3

Requisites

Prerequisite and Corequisite
VCIM-1200 Game Design I and VCIL-1640 3D Design, or concurrent enrollment, or departmental approval.

Outcomes
Course Outcome(s):
Analyze the aesthetic, technical and functional aspects of virtual and augmented reality video and animation, and describe how mechanics, devices and presentation contribute to its success or failure.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Explain how video and animation have evolved through history to arrive at virtual reality video.
2. Identify and use resources to research history and trends of virtual reality video.
3. Compare successful and unsuccessful VR video presentations to demonstrate how usability and aesthetic factors affect presentation outcomes.

Course Outcome(s):
Design virtual and augmented reality projects that meet current industry design process standards.

Objective(s):
1. Explain the elements, principles, structure, and mechanics of VR Video.
2. Recognize various genres of VR presentation and design.
3. Discuss the importance of user drive point of view and replayability.
4. Produce a Design Document and other formal presentation of concept material.
5. Employ user feedback to improve concept proposal.

Methods of Evaluation:
1. Written assignments
2. Laboratory exercises
3. Case studies
4. Projects
5. Presentations
6. Class Portfolio

Course Content Outline:
1. Introduction to Virtual Reality Video and Animation
   a. Concept Design
   b. Pre-production planning
   c. Production design
2. Introduction to cameras, lights, grip, electric, and sound recording tools a. Basic principles of lighting
   a. Lighting instruments for 360 degree production
   b. Light modifying tools
   c. Basic principles of sound recording
   d. Single and double system sound recording
3. Capturing 180 and 360 degree video
   a. Camera platforms
   b. fixed lenses
   c. Rigging and composing 180 degree and 360 degree cameras
4. Planning and pre-production
   a. Developing a concept
   b. Developing a storyboard
   c. Roles and working with a team
5. Editing using Captured Video
   a. File management and organization
   b. Viewing and organizing footage
   c. Stitching Media
   d. Basic trimming and arranging of selected footage
   e. Making a rough cuts
6. Working with Post production and Visual Aesthetics
   a. Preparing stills in a digital imaging program
   b. Applying color correction and color grading
   c. Creating VR Ready transitions
7. Working with audio in post
   a. Basic audio correction (sweetening)
   b. Removing noise
   c. Adjusting levels
   d. Technical specifications for audio
   e. Using royalty free or licensed loops, sound effects and music tracks
8. Designing VR ready title and graphics and visual effects
   a. Creating a basic title
   b. Creating menu with basic interactivity
   c. Developing presentation graphics for spherical display
9. Outputting finished video projects to VR device
   a. Transcode media for intended device
   b. Authoring video in VR authoring environment
   c. Side-loading and publishing to VR device
   d. Publishing to storefront, market place or distribution channel

Resources

John Bucher. *Storytelling for Virtual Reality*. O'Reilly, 2019. https://learning.oreilly.com/library/view/storytelling-for-virtual/9781351809245/xhtml/halftitle.xhtml

Celine Tricart. *Virtual Reality Filmmaking.* O'Reilly, 2019. https://learning.oreilly.com/library/view/virtual-reality-filmmaking/9781315280394/xhtml/front1.xhtml

---

Unity Virtual Reality Projects. 2nd. Packt Publishing, 2018. https://learning.oreilly.com/library/view/unity-virtual-reality/9781788478809/

Erin Pangilinan, Steve Lukas, and Vasanth Mohan. *Creating Augmented ad Virtual Realities*. O'Reilly, 2019. https://learning.oreilly.com/library/view/creating-augmented-and/9781492044185/titlepage01.html

---

Top of page
Key: 4376