

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

COMM 610

COURSE TITLE

VIRTUAL REALITY

TYPE COURSE

NON-FEE

VOCATIONAL

CATALOG COURSE DESCRIPTION

This course provides instruction in creating Virtual Reality (VR) panorama and object images. VR images are flat 2D representations of a 3D environment or object and can be manipulated by the viewer on a computer. Photographic shooting issues such as planning, executing a shoot, and processing the images are addressed. The production process, called VR authoring, transforms the photographic images into VR. VR images are incorporated into web pages, CDs, kiosks, and other such multimedia formats. (FT)

LECTURE /LABORATORY HOURS

54

ADVISORY

NONE

RECOMMENDED SKILL LEVEL

Eighth grade reading level, communicate effectively in the English language, and possess basic computer skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking
SDCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development
SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

COURSE GOALS

This course provides instruction in VR production and provides the opportunity for students to demonstrate competence through hands-on projects and portfolio pieces, enhances communication skills through group or team projects, improves design skills through assigned projects, affords technical skill in applying proper file formats to projects, develops software and hardware troubleshooting skills, and provides "real world" experiences to increase awareness of necessary job skills and career opportunities.

COURSE OBJECTIVES

Upon successful completion of this course, the student will be able to:

1. Describe the minimum hardware and software requirements.
2. Describe the basic types of VR.
3. Define and describe photographic terminology, basic specialized VR hardware and techniques necessary to create source images.
4. Analyze the needs of the project.
5. Evaluate a VR for appropriateness to a project.
6. Identify and apply the best mode, file format, resolution, color depth, and compression scheme for a project.
7. Apply pre-production concepts and planning to shoots using either digital or analog cameras.
8. Edit images.
9. Work with different file formats.
10. Import VR to other applications.
11. Port a file cross platform.
12. Troubleshoot hardware and software problems.
13. Work on a team to bring a project to completion.
14. Create source images for subsequent conversion into VR panorama and object VR.
15. Apply postproduction techniques to make the source images ready for conversion into a VR image.
16. Utilize VR authoring software to transform source images into VR panoramas and objects.
17. Incorporate VR into an HTML web page or other project.

SECTION II

COURSE CONTENT AND SCOPE

1. Introduction
 - 1.1 Understanding different types of VR objects
 - 1.2 Understanding different types of VR panoramas
 - 1.3 Manipulation of VR objects and panoramas
 - 1.4 Applications of VR objects and panoramas
 - 1.5 Developing Scenes
2. Photographic Basics
 - 2.1 Understanding focal length - angle subtended
 - 2.2 Understanding focal length – magnification
 - 2.3 Understanding focal length - nodal point
 - 2.4 Understanding f-stop and shutter speed exposure combinations
 - 2.5 Understanding depth of field - function of three items
 - 2.6 Depth of field illustrations
 - 2.7 Understanding cameras differences - rangefinder and single lens reflex
 - 2.8 Regular pan head - not suited for VR
 - 2.9 VR Pan head - adaptable to camera nodal point
3. Pre-Production - Planning VR Shoot
 - 3.1 Creating production map
 - 3.2 Planning outdoors lighting
 - 3.3 Planning indoors lighting
 - 3.4 Applying color correction
 - 3.5 Planning test shots
 - 3.6 Creating bracket shots
 - 3.7 Understanding timing shots
 - 3.8 Check list for supplies
 - 3.9 Finding the nodal point of a camera
4. Pre-Production - Software Setup
 - 4.1 Scanning software for analog source images
 - 4.2 Memory card readers - hardware and software issues
 - 4.3 Serial port image transfer - hardware and software issues
 - 4.4 Digital and analog cameras features relevant of VR production
 - 4.5 Image editing software
 - 4.6 VR authoring software
5. Pre-Production - Hardware Setup
 - 5.1 Setting up equipment – leveling, selecting dedents, etc
 - 5.2 Cautions – shutter force, direction of rotation, straps, and cables
 - 5.3 Mount camera nodal point over tripod axis of rotation were relevant
6. Postproduction
 - 6.1 Ordering source image file
 - 6.2 Image Processing – Setup for authoring VR - Retouching Flaws
 - 6.3 Image Processing - Setup for authoring VR - Exposure Compensation
 - 6.4 Image Processing – Resolving Motion Blur
7. Authoring Software
8. Embedding VR Objects and Panoramas into Web Page

APPROPRIATE READINGS

Appropriate readings may include, but are not limited to, periodicals, magazines, instructor-written materials, manuals, instructor selected URL's, and other publications related to design and production of VR images.

WRITING ASSIGNMENTS

Appropriate writing assignments may include, but are not limited to, preparing text for an assigned project, identifying and listing industry standards, preparing a list of current software and hardware used in the field of multimedia and VR production, maintaining a portfolio of class assignments, providing written answers to specific questions related to VR and design, and preparing a plan of action for shooting source images on location.

OUTSIDE ASSIGNMENTS

Outside assignments may include, but are not limited to, reading texts, reference resources or handouts; Internet sites, and research as needed to complete projects; and organizing and preparing written answers to assigned questions.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Assignments which demonstrate critical thinking may include, but are not limited to, determining the nodal point of a camera, configuring a VR tripod head for a specific number of images within 360 degrees, attach camera about its nodal point to a VR tripod head, shoot the appropriate number of source images required for subsequent transformation into a VR panorama or object, incorporating appropriate design elements, and prioritization of multi-task projects.

EVALUATION

Evaluation will be based on performance in a variety of activities and assignments such as:

1. Written and practical tests.
2. Completion of assigned projects.
3. Attendance and punctuality.
4. Completion of performance objectives.
5. Participation in class activities.
6. Working on projects with classmates.
7. Creation of a portfolio.

Upon successful completion of each individual course a Certificate of Course Completion will be issued. Upon successful completion of all courses included in the program a Certificate of Program Completion will be issued.

METHOD OF INSTRUCTION

Methods of instruction will include, but not be limited to, lecture, self-paced lab, demonstration, individualized study, use of audio-visual aids, tutorials, group/team work and other unique

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instructional strategies such as, field trips, job shadowing, volunteering and guided student job assignments may be utilized. This course, or sections of this course, may be offered through distance education.

TEXTS AND SUPPLIES

Texts:

The QuickTime VR Book: Creating Immersive Imaging on Your Desktop, Susan A. Kitchens

QuickTime/QuickTime VR Training CD - Vol 1 of 2

Macintosh/Windows, Ray Monigold; CD-ROM

QuickTime/QuickTime VR Training CD - Vol 2 of 2

Macintosh/Windows, Ray Monigold; CD-ROM

URLs:

<http://www.adobe.com>

<http://www.apple.com>

<http://www.kaidan.com>

<http://www.killersites.com>

<http://www.web-master.com>

Software Needs:

A compatible browser

QuickTime plug-in and QuickTime VR Components installed in your browser

Scanning software

Image manipulation - Photoshop

Hardware Needs:

Computer that exceeds the VR authoring program's recommended system requirements

Tripod

VR head

Digital camera (preferred)

Storage: Blank CDs, DVDs, USB drives, etc.

PREPARED BY Edward W Gennetten DATE September, 1999

REVISED BY Paul Richard DATE February 22, 2007

REVISED BY Instructional Services, SLOs added DATE March 7, 2017

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog