Virtual Reality for Artists

Instructor: Gregory Vershbow

With rapid developments in virtual reality technology, artists have new opportunities to exhibit work at any scale, create interactive and immersive experiences, and bridge distances between makers and viewers. This course will focus on creating art for virtual (and augmented) reality, and learning about the development of VR as a medium and how it is being utilized by contemporary artists.

Students will create virtual exhibition spaces for images, videos, sculptures, and develop interactive work that can only exist in Virtual Reality. We will also develop 3D sculptures for augmented reality. We will develop our camera and editing skills for making still and video-based VR media and learn the fundamentals of 3D Modeling in *Rhino 3d* and *Blender*. Students will also develop some basic game design skills using *Unity 3d* and utilize advanced skills for image and video editing. Readings in this course will cover contemporary topics in VR and consider pre-VR immersive mediums such as Panorama painting and stereographic photography.

Synchronous and Asynchronous instruction:

While this is an in-person class, a large portion of technical lessons will be recorded and posted to canvas, so that students may follow them at their own pace. This will allow us to use class time to focus issues specific to the students' work.

Requirements:

Experience with Photography, 3d design, video or animation would be helpful, but brave students without such experience are welcome.

Course objectives:

Students will develop:

- A working knowledge of how artists use virtual reality technology.

- A critical understanding of how artists used pre-virtual reality technology.

- A familiarity with a wide range of VR hardware and file formats.

- A mastery of fundamental modeling and immersive imaging techniques using Blender, and VR Cameras.

Course Work / Exams:

This class will include 4 studio assignments, multiple readings, a midterm exam, your final project which will include a paper and a visual component.

Studio Assignments:

Students will complete a series of three core assignments in the first half of the course. The second half of the course will be dedicated to developing an independent project.

In addition to the core studio assignments, short exercises will be posted on canvas each week so that students can develop/reinforce technical skills learned in class.

Assignment #1 Create a 360 VR photo with a standard camera.

Historically photography has been an art of framing. Even if a picture is printed directly from a camera (without post-processing) the photographer can manipulate an image simply by choosing what is in and out of frame. As an example, imagine two pictures of a river captured with the same camera from the same place (*vantage point*). In one picture we see only water and trees, the other shows us the same water and trees, but also the cement paved peer and parked cars. Without changing the camera's vantage point the photographer is able to at one angle show an image of "untouched nature" and at the other, an image the juxtaposes nature with human-made structures.

When making a 360 or spherical panoramic image a photographer may select a vantage point but not an angle of view. Framing becomes an entirely different affair, determined by time and place but viewing direction or even focal length*.

For this assignment you will conceive of an image that depicts a scene with juxtaposing themes. These themes could include natural vs human made landscape, staged vs candid scenes, urban vs suburban views or anything else you may observe. This image can include staged elements, but it should not include post-manipulations beyond those needed to composite the images together.

Assignment #2 Creating a VR gallery space with Blender

For this assignment, you will create a VR360 panorama of a virtual gallery space that you will build in Blender.

You should curate a small coherent series of your own 2d images. In building this scene you must act as Artist, Curator and Architect. Unlike art that is viewed on a screen, the VR environment will allow for an experience of space and scale.

Carefully consider the scale of your images in relation to the view, and consider with your gallery space should directly interact with your artwork.

Assignment#3 Site Specific Intervention with Augmented Reality

For this assignment, you will use AR to create a site-specific sculpture that serves as an intervention/disjunction/disruption in a space. The final form and materials of your intervention (which can be as simple or complex as you'd like) will take the form of a short video clip made with your rendering inserted into the scene as an augmented reality object.   Unlike placing an object into a scene in post-processing, you will be able to compose your video clip as if you were actually on location.

Your design does not need to be complex rendering.   Think of it as the thoughtful connection between the site you choose, the gesture you execute within it, and how you compose the scene in your camera.

Choose a site that you are drawn to. What is the nature of the site you've chosen? What are its uses (recreational, commercial, educational, etc.)? What are its quieter repressed implications (political, social, personal)? What are the materials and forms contained within it? Think of what you could do there. Use your gesture to emphasize what already exists? Or to draw out what seems to be hidden?

Assignment#4 Personal project

Over the second half of the class you will develop an independent project. You may utilize 3d Modeling, VR photo/video capture, interactive design or even create your project within VR software like gravity sketch.

Reading/Writing Assignments.

Students will write response essays for readings that consider non-digital precedents for their studio work, and consider specific implications for creating art in a VR/AR space.

Reading Assignment #1

-Western Landscape Photography: Then and Now, Rachel McLean Sailor, 2015
-Géricault, the Panorama, and Sites of Reality in the Early Nineteenth Century, Jonathan Crary 2002
-Intermedia Stages of Virtual Reality in theTwentieth Century: Art as Inspiration of Evolving Media, Oliver Grau 2003

Writing Prompt: Write a response that considers how a 360 degree composition challenges artists agency in framing images. Are spherical panoramas images, virtual spaces, or both? How do these factors apply differently to virtual and physical panoramic art?

Reading Assignment #2

Art and Objecthood, Michael Fried 1998
Real Spaces, David Summers 2003
A More Accessible and Eclectic Future for Virtual Reality, Micahael Blum 2017
An AR App Connects the Life of an Opioid Victim to the Met Museum's Sackler Wing Hakim Bishara 2020

Writing Prompt: Can the geolocation of AR art make it truly site specific, or is augmented reality just a new form of photo/video montage? Can AR or VR art be "minimalist"? How can AR and VR address issues of scale and materiality that are intrinsic to site specific and minimalist art.

Reading Assignment#3

*The Links Between Linear Perspective and Virtual Reality Technology, [Filippo Lorenzin](#)
2021*
*Tripping Across the Lines Between Physical and Virtual Reality with Laurie Anderson,
Heather Kapplow 2018*
Virtual Art—Digital! The Natural Interface Oliver Grau 2003
Immersion and the illusion of presence in virtual reality, Mel Slater 2018

Writing Prompt: Consider how different fields in immersive visual media
technology define the concept of "Presence". When creating virtual reality
artworks, what form of interactivity is required for the viewer to feel a sense of
presence within the artwork? Should VR artist's consider their work to be an
evolution from representational and illusionistic imagery, or an of shoot from
electronic games and applications?

Basic Schedule.

Lecture: Early Photography and Pre-VR / Assignment #1 Create a 360 VR photo with a standard camera
Lab: create VR Panorama
Critique Assignment #1 / Introduce Assignment #2 "Creating a VR gallery space with Blender"
Lab: Fundamentals in blender 3d
Lab: Creating VR space for 2d work.
Critique Assignment #2   Lab Advanced modeling techniques.

Lecture: Vr installation art. Lab: Modeling/Animation Techniques in Blender. First proposals due for independent final project.
Discuss Readings on site specific Art Advanced animation and Sculpting in 3d.
Critique Assignment #3/ Drawing in space, with Oculus VR headset, Tilt Brush and
Programing interactive elements with the UNITY game engine.
Final proposals due for independent final project.
Discuss Readings about VR performance art.
Lecture: Video Games as new Interactive Art Studio Lab for final project.
Final Critique