**Spring Semester Course: Virtual Architecture: World Building & Virtual Reality Workshop**

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This Visual Studies workshop borrows tools and workflows from the gaming and virtual reality industries, to explore architectural production through the lens of speculative physics, causality and interaction.

**ABOUT**

Our built environment represents the limits of our physics and material properties. What types of architecture will emerge of exploration of alternative physical constraints? If cause and effect could be re-imagined, what would be the new modes of interaction with one’s environment?

Using the unique affordances enabled by Virtual Reality headsets and Game Engines, this course wishes to explore speculative architectures, adapted to alternative physics, materials and casualties.

Starting from the articulation and design of a behaviour, interaction or rule, students will expand the scale and detail of their environment throughout the semester.

Through lectures, demonstrations and workshops, students will be provided with the conceptual framing and technical knowledge to assist them in the creation of a rich and interactive environment, pushing the boundaries of architectural imagination.

**TAKEAWAYS**

• Basic understanding of scripting concepts and techniques in Unreal Engine 4.

• Experience creating complex environments in Unreal Engine 4

• Ability to build and export games to Oculus Rift Virtual Reality headset, for immersive interactions

• Ability to integrate new skills into existing architectural design workflows

**PREREQS & PREPARATION**

No prior scripting or gaming experience is necessary. The VS workshop will serve as introduction to all key concepts and technical requirements.

Students will need access to a computer with the free version of Unreal Engine 4 installed.

**SOFTWARE**

• 3D modeling software (Sketchup Pro, 3ds Max, Rhino 3D, SolidWorks etc.)

• Unreal Engine 4

• Optional: V-Ray

**Unreal Engine 4:** UE4 is a powerful and flexible development platform for creating multi platform 2D and 3D games, interactive experiences and simulations.

**Oculus Rift**: The Oculus Rift is a virtual reality headset that lets users immerse in virtual worlds and experiences.

**STRUCTURE**

**Phase I:** Interaction

Students will define and script a single behaviour, interaction or rule and will demonstrate it through an abstract body or object.

**Phase II:** Object

Students will develop an architectural object responding to the logic or interaction they’ve created in phase I.

**Phase III:** Environment

Students will create an interactive architectural environment stemming from the interaction and

architectural object they've created in previous phases.

**Phase IV:** Body

Students will consider questions of exploration and discovery emerging from their own presence in the simulated environment they’ve created, and will develop a travel method for interacting with it.

**Phase V:** Mediation

Students will demonstrate their projects for an invited panel at a final review.