

# POINT CLOUDS + UNREAL WORLDS: AN INTRODUCTION TO IMMERSIVE TECHNOLOGIES

Arch 500\_001

Instructor: Dawn Gilpin, [dgilpin@umich.edu](mailto:dgilpin@umich.edu)

Meeting Time: Wednesday 8:30 - 11:30am

Architecture Computer Lab 2109



Michigan Stadium 5th Floor Suites. Scanned by EIPC team members. Registration by Xin Li. Winter 2022.

## OVERVIEW

This course introduces students to advanced techniques in 3D laser scanning, photogrammetry, and Unreal Engine basics\*, as technical extensions of disciplinary conventions in architecture visualization. The course provides students with a comprehensive understanding of how these tools and techniques can be used to make more vivid design ideas, spatial narratives, and positions developed in architecture studios. The course will cover a range of topics including:

**3D Laser Scanning:** Understanding the fundamentals of 3D laser scanning, including the equipment and software required, and how it can be used to capture accurate and detailed 3D models of real-world objects and environments. Each student will be certified with use of the FARO scanner by end of the semester. This will be the primary focus of this course.

**Photogrammetry:** Understanding the fundamentals of photogrammetry, including how to capture and process high-quality images to create accurate and detailed 3D models of real-world objects and environments.

**Unreal Engine\*:** Understanding the fundamentals of this game engine, including how to use it to create immersive, real-time visualizations of architectural designs, and how to leverage its advanced lighting and rendering capabilities enabling world-building and spatial narrative scenario creation.

Throughout the course, students primarily work with the 3D laser scanner and software to obtain certification and participate in 2 workshops on photogrammetry.

*\*time and interest permitting*