

F25.06: Exploration of Concrete 3D Printing

Overview

This project is focus on advancing concrete 3D printing as an artistic medium, with three primary focuses: first, refining concrete to make it more sustainable for the Colorado Plateau and 3D printing; second, creating a pedagogical framework for teaching this innovative process; and third, exploring the technical and creative aspects of using this technology for artistic expression. The initial phase will concentrate on harnessing both the machine and the material to enhance artistic creation. This will involve not only mastering the technology but also experimenting with the material properties of concrete to optimize it for artistic purposes.

What the student will DO and LEARN

- **Design Techniques for Concrete 3D Printing:** Students will learn the intricacies of designing specifically for concrete 3D printing, focusing on the unique challenges and possibilities this medium offers.
- **Systematic Material Experimentation:** We will explore a methodical approach to experimenting with various materials in the design and construction of tangible objects, encouraging innovation and practical problem-solving.
- **Sustainable Concrete Chemistry:** Students will work to understand the chemistry of concrete. Students will learn how to modify and develop concrete formulations to make them more environmentally sustainable.
- **Public Sculpture Considerations:** Students will explore the considerations in developing public sculptures, including aesthetics, durability, public interaction, and safety.
- **Modular Design Strategies:** Students will be taught how to design large-scale pieces in smaller, manageable segments.

Additional benefits

This program presents a unique opportunity for students to broaden the application of their creative skills and critical thinking. It's not just about exploring art in its traditional sense; it's about extending these skills to a wider range of projects and contexts. A key focus will be on teaching students how to navigate the challenges of pioneering a new media and artistic practice. This will involve a hands-on approach to learning, where students will engage in prototyping, followed by a cycle of revising and refining their work. Such an iterative process is crucial in developing both their artistic vision and technical skills, preparing them to tackle complex problems and innovate in their future endeavors.

Additional qualifications

Curiosity and love of developing ideas and taking on odd challenges.

Time commitment

5 hrs/week for 30 weeks