

## ARCH 672 Propositions | Computational Fabrication

M Th 1-6 Fall 2026

Studio | FABLab 1205 Robotics Lab

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Office Hours, W 1-4, by appt.

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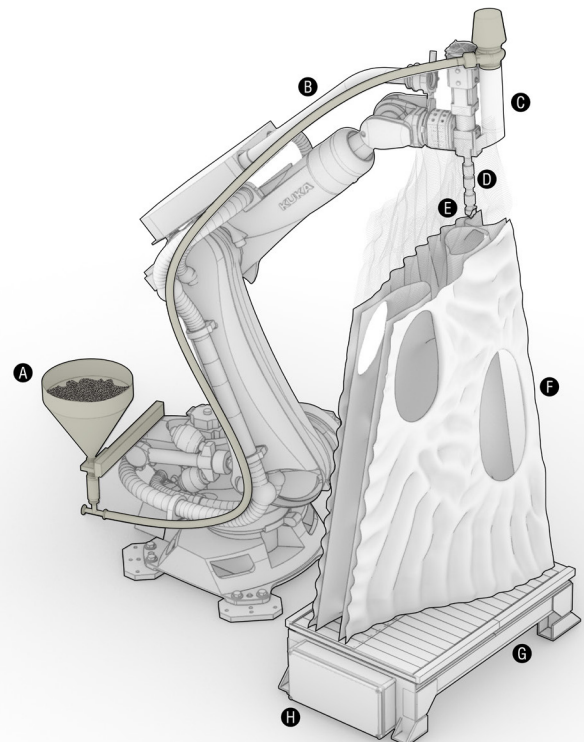
Do you want to learn how to use computational design workflows coupled with robotic fabrication to prototype and build high performance building components? *Computational Fabrication* is a Propositions studio dedicated to exploring how contemporary design and fabrication techniques contribute to advancing architecture and construction.

For the Fall 2026 semester, this course will focus on the application of robotic 3DP of thermoplastic composites to building façades. Starting from the basics, this course will introduce students to robotic additive manufacturing and parametric design-to-fabrication workflows, developing the skills to 3d print building components at scale. Many of these fabrication techniques have been developed through years of research at the Taubman College FABLab and can be applied across a wide range of materials. Students will learn about current research on 3DP building façades and use this knowledge to inform their own design process. The course will introduce robotic programming, simulation, and operation, as well as slicing tools applicable to robotic 3DP and learn to operate the custom extruder used in the lab.

No prior experience with robotics or programming is required, however students should be experienced with 3d modeling in Rhino 8. Grasshopper experience is a plus, but we will also cover techniques as needed during the course. The class will consist primarily of lectures, individual or group meetings/desk crits, demonstrations/exercises on robotic 3DP techniques, and periodic design reviews. These reviews are intended to promote discussion around the broader topic of digital technologies, as well to provide a metric for the overall progress of each student's work or research trajectory.



3DP Mullion, Jutang Gao et al, 2025



Robotic 3DP Process, Meibodi, McGee, et al, 2022