



## LIQUID THRESHOLDS: From Casting to 3-D Printing

Arch 497.001, Fall 2018, Shadi Nazarian  
Wednesdays from 10:10 AM to 1:10 PM

This is a graduate and upper level undergraduate Interdisciplinary workshop/seminar offered by Shadi Nazarian, a member of the Material Matters Research Cluster, in the department of architecture. Experts from various fields will engage the interdisciplinary teams in the development of their projects.

### COURSE STRUCTURE:

The course will consist of a seminar and a lab/workshop. In regular group discussions students and faculty will discuss assigned reading materials, individual research conducted by students, and share findings to further develop and clarify ideas in preparation for experiments. Hands on experiments will take place in our lab, and sometimes in other labs across campus. Experiments will be designed and conducted in a studio-like environment with faculty guidance based on analysis and discussions among students and faculty.

### COURSE CONTENT:

We will explore, discuss and conduct experiments with materials such as recycled glass, molten glass, ceramics, sand, cement, slag, fly ash, and various types of cement such as geopolymers. We will investigate molding, sintering, casting, laminating and kiln forming as well as additive manufacturing (3D printing) of these materials.

We will use low temperature and high temperature processes and a variety of energy sources to create new materials with ceramics kilns, microwaves, lasers and particle beams.

Additive manufacturing is a prominent topic in architectural investigations and in the production of structure-bearing cement walls with minimal material waste.