ARCHITECTURE: ROBOTICS AND AUTONOMOUS SYSTEMS, MSD

The Master of Science in Design: Robotics and Automated Systems (MSD-RAS) explores avenues for re-situating the role of architectural design within present day autonomous technologies. The program critically develops novel approaches to manufacturing, construction, occupation, demolition and re-use, through creative engagement with robotics, material systems, and design-computation. Students develop skills in advanced forms of robotic manufacturing, artificial intelligence, sensor and vision technologies in order to develop methods for design that harness production or live adaption as a creative opportunity. Operating predominantly through material prototyping and robotic fabrication, participants critically assess the socio-political, ethical and philosophical dimensions of a recent societal shift towards algorithmic and autonomous technological dependence, and provoke alternative forms of dialogue with industry and culture that address our individual and collective engagement with the built environment. The work of the program is both highly speculative and physically manufactured. Students collaboratively develop robotically manufactured architectural prototypes (part or whole) that is presented and exhibited at the completion of the program.

Curriculum

A total of 10 course units are required.

First Year
Summer
ARCH 8000
Introduction to 3D Programming

Fall
ARCH 8010
Material Agencies: Robotics & Design Lab I

ARCH 8030
General Overview of Algorithmic Design and Robotic Fabrication

ARCH 8050
Introduction to Micro-controllers, Sensor and Actuator Systems

ARCH 8070
RAS Theory

Designated Elective (within Architecture + Engineering)

Spring
ARCH 8020
Material Agencies: Robotics & Design Lab II

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2022 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.