_generative**design**computing

In architectural practice today the computer maintains a central role in design and production. However, its narrow focus on the automation of simple drafting tasks fails to address the extraordinary potentials digitalization holds for design culture in general and the discipline of architecture in particular.

_generative**design**computing represents a set of topics that greatly extends the role of computers in the design process beyond task automation. This course unpacks the role of programming in design and investigates the potentials of working systematically with the machine not simply as a tool, but a collaborator in the process.

Our world is increasingly impacted by the use of algorithms. A full engagement with this reality requires designers to not only utilize available software, but to author new ones. Software developers' open source thinking allows designers to adapt or create specialized tools able to process or generate form within the framework of a pre-existing digital environment. _generative**design**computing gives the students a structure to learn the rules and syntax of programming while exploring the application of procedural logics in basic design exercises. Coding will be done in Python/Rhinoscript, a basic yet powerful programming language ideal for designers/beginning programmers.

The course is structured around a series of fundamental design exercises which progressively introduce students to a variety of coding techniques, form producing functions, and computational concepts: From the fundamentals of data structures and control flow, to algorithms and parametric relationships, vectors and recursion, cellular automata, agents and generative systems. Each successive exercise/concept builds on prior work. Students will ultimately demonstrate their aptitude and fluency in design computation through the completion of a longer term final project. Critical readings of seminal computation texts will inform work on a weekly basis.

This course assumes an intermediate working knowledge of computer modeling with Rhinocerous. No previous experience with coding in Python/Rhinoscript is required. *Note: Regardless of enrollment status, attendance at the first class is mandatory.*