MSCD
Master of Science in Computational Design

1 Fall 1st Year (36 units)

Research: (9 units)
Inquiry into Computation, Architecture & Design (9)

Computation: (9~10 units)
C1: Students with prior programming background are advised to take Fundamentals of Programming and Computer Science. Students without programming background are advised to take an introductory programming course such as Principles of Computing, Computing for the Arts with Processing, or Introduction to Computing for Creative Practice.

Selectives: (18~24 units)
SC 1 & 2

Program Description:
The Master of Science in Computational Design mobilizes Carnegie Mellon’s computational strengths to give students the tools to explore new design opportunities and critical perspectives at the intersection of architecture, design, and computation. In spheres ranging from the applied to the speculative, and from the poetic to the critical, students in the program investigate subjects such as artificial intelligence, architectural robotics, digital fabrication, simulation, computational geometry, responsive environments and shape grammars—as well as embodied and tangible forms of design interaction, fabrication, and expression.

As a research program, the MSCD adopts a broad view of design technologies as vehicles of design inquiry, as cultural artifacts, and as worthy subjects of critical analysis and debate. The program is well suited to highly inquisitive applicants from a variety of fields who are interested in challenging disciplinary boundaries, developing a unique research agenda, and acquiring the conceptual and technical skills to conduct computational design research at the highest levels of scholarly rigor and creativity.

The curriculum comprises three areas:
• Research: A sequence of required seminars exploring Computational Design as an arena of creative research and practice, and to the methods of academic inquiry needed for the formulation of research projects.
• Computation: A required sequence of courses providing a solid technical understanding of computational concepts and techniques. The precise choice and sequence is based on each student's prior skill level and the nature of their research project. A list of recommended courses is available upon request.
• Selectives: The Selectives give students the flexibility to develop an emphasis based on their specific research interests and strengths. Any courses taught by Computational Design faculty count as 'Selectives,' as well as approved extra-departmental courses.

2 Spring 1st Year (36 units)

Research: (6 units)
Pre-Thesis Prep (6)

Selectives: (18~24 units)
SC 3 & 4

3 Fall 2nd Year (36 units)

Research: (6 units)
Pre-Thesis (6)

Selectives: (18~24 units)
SC 5 & 6

Program Requirements:
In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSCD program must satisfy the following:
• Students must complete a minimum of 144 units of course work including a 36 unit thesis for graduation.
• Students must complete a minimum residency of three (3) academic semesters with full-time status (minimum 36 units per semester).
• All course substitutions must be approved by the program Track Chair.
• Students with strong programming/mathematical skills may apply for advanced standing in the program.

4 Spring 2nd Year (36 units)

Research: (36 units)
Thesis (36)