MSSD

Master of Science in Sustainable Design

CARNEGIE MELLON —ARCHITECTURE

Pre-Requisites:

Summer Online: 48-689 | DSW: Digital Skills Workshops (3)

Fall: 48-635 | Environmental Systems: Climate & Energy (9)

1 Fall 1st Year (45 units)

Core: (36 units)

48-743 | Introduction to Ecological Design Thinking (9)

48-733 | Environmental Performance Simulation (9)

48-783 | Generative Modeling (9)

48-798 | HVAC & Power Supply for Low-Carbon Buildings (9)

Selectives: (0 - 18 units)**

48-620 | Situating Reserch (3)

2 Spring 1st Year (42 units)

Core: (min 15 units)

48-711 | Paradigms of Research in Architecture (6 or 9)

48-722 | Building Performance Modeling (9)

Selectives: (27 - 39 units)**

Optional Summer: (3 Units)

48-700 | Practicum (3)
NB: F1 students must file for CPT

3 Fall 2nd Year (min 36 units)

Core: (min 21 units)

48-729 | Productivity, Health & the Quality of Built Environment (9)

MSSD THESIS
(12 or 18 Units)*

48-731 | Sustainable Design Synthesis Prep (12~18)

Selectives: (15 - 33 units)**

4 Spring 2nd Year (min 36 units)

Core: (min 24 units)

MSSD THESIS
(24 or 18 Units)*

48-732 | Sustainable Design Synthesis (24~18)

Selectives: (12 - 30 units)**

Program Description:

The Master of Science in Sustainable Design (MSSD) is a STEM-accredited, post-professional, design-research program that fosters innovative sustainable strategies for designing the built environment across scales. The program's interdisciplinary thinking and technical expertise empower the creative fusion of design agency with evidence-based practices, positioning architecture as a vehicle for environmental stewardship.

The MSSD is a 4-semester program that prepares its graduates for careers focused on reshaping the built environment toward a more resilient and equitable future through creative solutions grounded in ecological design, environmental ethics, technical proficiency, and critical analysis

Program Requirements:

In addition to the standard requirements for all graduate students in the School of Architecture, students in the MSSD program must satisfy the following:

- Students in the MSSD program must complete a minimum of 159 units of course work with a minimum residency of three (3) academic semesters at full-time status (36 units). Applicants with significant experience may apply for advanced standing in the program upon admission.

- The MSSD program supports the Accelerated Masters Program (AMP), as well as the sequential completion of two graduate degrees within an expedited timeframe. It allows students within the School of Architecture to double-count up to 48 units between the combined programs.

PREREQUISITE COURSES: The prerequisite courses offer foundational knowledge. Students with previous experience in these areas are encouraged to seek exemption from the prerequisite courses.

CORE COURSES: MSSD students must complete Core Courses as per the curriculum chart. Any core course substitutions must be approved by the program Track Chair.

MSSD THESIS*: A total of 36 units of Sustainable Design Synthesis need to be taken to complete the program.

CORE SELECTIVES**: MSSD students must take at least one (1) Core Selective from each of the three categories, with a cumulative total of 36 units. A full list of selectives is available from the Track Chair. The pre-approved *examples* of Core Selectives include:

1. **TOOLS and METHODS:** Computation, Analysis & Data Modeling
   - 48724: Scripting and Parametric Design
   - 48755: Introduction to Architectural Robotics
2. **ECOLOGICAL IMPACT:** Environmental Assessment
   - 48713: Urban Ecology
   - 12714: Environmental Life Cycle Assessment
3. **DESIGN and OPERATIONS:** Ecological Design Synthesis
   - 62715: Shaping Environments: Geometry and Matter
   - 48692: Shaping Daylight Through Simulation