

# MSSD – Advanced

## Master of Science in Sustainable Design



### Prep:

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

Pre-Requisite: (9 units)  
48-635 | ES 1: Climate & Energy (9)

### 1 Fall 1<sup>st</sup> Year (45 units)

Core: (36 units)

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

48-798 | HVAC & Power Supply for Low-Carbon Buildings (9~12)

48-733 | Environmental Performance Simulation (9)

48-783 | Generative Modeling (9)

Selectives: (9 - 18 units)\*\*

### Program Description:

The Master of Science in Sustainable Design is a post-professional research-based graduate program focused on enabling innovative design solutions through deep technical expertise and critical thinking. The MSSD offers an integrated education that strives to prepare its graduates for careers that will reshape the built environment. The MSSD program engages socio-ecological and environmental issues related to architecture and urbanism at the intersection of design, building science and technology. This is a 4 semester program that welcomes applications from both research and practice-oriented candidates.

### 2 Spring 1<sup>st</sup> Year (45 units)

Core: (18 units)

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

48-722 | Building Performance Modeling (9)

Selectives: (12 - 18 units)\*\*

Free Electives: (15 - 18 units)

### 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 4 semester track (advanced) 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).
- For AMP students or candidates with greater than eight years of design practice experience this degree can be achieved in 3 semesters (MSSD - Applied) by completing a minimum of 135 units of course work with a minimum residency of two (2) academic semesters at full-time status (36 units).

### Optional Summer: (3 Units)

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

### 3 Fall 2<sup>nd</sup> Year (45 units)

Core: (9 units)

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

### Synthesis Thesis Project (12~18 Units)\*

48-731 | MSSD Synthesis Prep (12~18)

Selectives: (15 - 18 units)\*\*

Free Electives: (3 - 12 units)

### Synthesis Project\*

A total of 36 units of Project Synthesis need to be taken to complete the program.

### Core Selectives\*\*

MSSD students must take at least one (1) selective from each category, with a cumulative total of 36 units. MSSD students are limited to a maximum of 54 units per semester.

Changes to curricular offerings take place regularly. Visit the CMU [Schedule of Classes](#) for up-to-date information.

A full list of selectives is available from the track chair. The selective categories and pre-approved courses include:

### 4 Spring 2<sup>nd</sup> Year (24 units)

### Synthesis Thesis Project (24~18 Units)\*

48-732 | MSSD Synthesis (24~18)

xx-xxx | Synthesis Support Course (6)

Cat 1 | METHODS: Computation, Analytical Tools & Data Modeling

48-724 | Scripting and Parametric Design

48-755 | Introduction to Architectural Robotics

27-406 | Sustainable Materials

Cat 2 | IMPACT: Environmental Ethics, Code & Policy

48-713 | Urban Ecology

48-795 | LEED, Green Design & Building Rating

Cat 3 | DESIGN and OPERATIONS: Ecological Design & Sustainable Development

62-715 | Shaping Built Environments

70-373 | Sustainable Operation