

# MSAECM

## Master of Science in Architecture–Engineering–Construction Management

Carnegie Mellon University  
School of Architecture  
Carnegie Mellon University  
Civil & Environmental Engineering

### 1 Fall 1<sup>st</sup> Year (40 units)

#### Core: (12 units)

- 12-794 Graduate Seminar,  
Section D (0) [P/N]  
48-725\* Real Estate Design & Dev. (12)

#### Sustainability: (12 units)

- 48-768\* Indoor Environmental Quality (12)  
**Or/And<sup>+</sup>**  
48-729\* Sust., Health & Prod.(12)  
**Or/And<sup>+</sup>**  
48763\* Protean Systems (12)

#### Prerequisites: (9 units)

- 12-411 Project Management for  
Construction (9)

#### Recommended: (3 units)

- 48-620 Graduate Seminar: Situating  
Research (3)

#### Approved Fall Electives:

- 12-712 Sustainable Eng. Principles (12)  
48-763 Protean Systems (9)  
48-783 Generative Modeling (9)  
^ 19-684 Eng & Tech Innovation Mgmt (6)  
^ 19-689 Finance for Innov. Management (6)  
^ 19-691 Decision-Making Inno. Mgmt (6)  
P 2202 Construction Scheduling  
P 2205 Construction Fin. & Cost Control  
P 2213 Construction Safety

### 2 Spring 1<sup>st</sup> Year (40 units)

#### Core: (12 units)

- 12-794 Graduate Seminar,  
Section D (0) [P/N]  
48-759\* Value Based Design (12)

#### Management: (12 units)

- 12-750 Infrastructure  
Management (12)  
**Or/And<sup>+</sup>**  
48-756\* Project Planning &  
Reporting (12)

#### Computational Skills: (12 units)

- 12-711 BIM for Eng, Construct.,  
& Facility Management (12)  
**Or/And<sup>+</sup>**  
48-781 Spatial Analysis in  
Infrastructure Planning (12)

#### Approved Spring Electives:

- 12-714 Environmental LCA (12)  
12-745 Advanced Infrastructure Project (12)  
48-711 Paradigms Research in Arc. (6/9/12)  
48-722 Building Performance Modeling (12)  
48-485 Design & Documentation in Revit (3)  
48-752 Zero Energy Housing (9)  
^ 19-689 Finance for Innov Management (6)  
^ 90-789 Resilient & Sustainable Comm (12)  
P 2201 Construction Cost Eng.  
P 2203 Construction Methods  
P 2204 Construction Law & Risk Mgmt

### 3 Summer

#### Required:

- 48-704 MS Internship (3 units) [P/N]

#### Program Description:

The **Master of Science in Architecture–Engineering–Construction Management (MSAECM)** program is jointly offered by the School of Architecture and the Department of Civil & Environmental Engineering. The program prepares building-delivery professionals for careers in capital project delivery dealing with the entire life-cycle of capital projects, from pre-design to design, construction, commissioning, operation, and maintenance stages. It focuses on the integration of design and technology, particularly advanced information systems, as a means of both improving building performance and eliminating negative environmental impact. Graduates of our program are educated to become effective decision makers who can positively impact economic, environmental, and ethical aspects of the built environment through professional management strategies.

### 4 Fall 2<sup>nd</sup> Year (40 units)

#### Core: (24 units)

- 48-767\* Transdisciplinary Thinking (12)  
48-765\* AECM Project (12)

#### Quantitative Modeling: (12 units)

- 12-706 Civil Systems Investment &  
Planning (12)  
**Or/And<sup>+</sup>**  
48-733 Environmental Performance  
Simulation (12)

#### Approved Electives:

Same as Fall 1st Year

#### Program Requirements:

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

- One-hundred twenty (120) units of coursework are required for graduation. The 3-unit [P/N] summer internship does not contribute to the total unit count. Course substitutions and prerequisite waivers will be reviewed on a case-by-case basis.
  - The maximum per semester unit count is 54 units.
  - Students must complete a minimum residency requirement of three (3) academic semesters at full-time status (minimum 36 units per semester).
  - Advanced standing is available to qualified CMU students within the B.A. in Arch or B.Arch or other master's programs through the:  
[Accelerated Master's Program \(AMP\)](#).
- +** Students must choose one of these two courses and are encouraged to take the other as an elective.  
**^** Courses outside of the SoA and CEE. Registration is limited.  
**P** Courses at UPitt via PCHE cross-registration.  
**\*** Minimum grade of B required.