# Master of Science in Architecture–Engineering–Construction Management

## 1 Fall 1st 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) [^]
- 48-729 Sust, Health & Prod. (12) [Or/And+]
- 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)
- 12-741 Data Management (6)
- 48-798 HVAC & Power Supply for Low-Carbon Buildings (9/12)
- 48-763 Protean Systems (9)
- 48-783 Generative Modeling (9) [^]
- 19-684 Eng & Tech Innovation Mgmt (3/6)
- 19-689 Finance for Innovat. Management (6)

## 2 Spring 1st 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+]
- 48-756 Project Planning & Reporting (12) [^]
- 48-781 Spatial Analysis in Infrastructure Planning (12)

**Computational Skills:** (12 units)
- 12-711 BIM for Eng. Construct., & Facility Management (12) [Or/And+]

**Approved Spring Electives:**
- 12-603 Construction Estimating (9)
- 12-714 Environmental LCA (12)
- 12-718 EES&S Project (12)
- 12-745 Advanced Infrastructure Project (12)
- 48-711 Paradigms Research in Arch. (9/12)
- 48-722 Building Performance Modeling (12)
- 48-752 Zero Energy Housing (9) [^]
- 19-684 Eng & Tech Innovation Mgmt (3/6)
- 19-689 Finance for Innovat. Management (6)
- 90-789 Resilient & Sustainable Comm (12)

## 3 Summer Required:
- 48-704 MS Internship (3 units) [P/N]

## 4 Fall 2nd Year (40 units)

**Core:** (24 units)
- 48-757* Transdisciplinary Thinking (12)
- 48-765* AECM Project (12)

**Quantitative Modeling:** (12 units)
- 12-706 Civil Systems Investment & Planning (12) [Or/And+]
- 48-733 Environmental Performance Simulation (12)

**Approved Electives:**
- Same as Fall 1st Year

## 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.

## 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 CMU. Registration is limited.
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- Students must choose one of these two courses and are encouraged to take the other as an elective.
- Courses below this line are outside of the SoA and CEE. Registration is limited.
- Minimum grade of B required.