

M.S. IN CONSTRUCTION MANAGEMENT

Situational Background

The U.S. Census Bureau puts the total annual value of construction in the United States at approximately \$900 billion (8% of the U.S. gross national product), making the construction industry one of the most important sectors of the nation's economy.

The University of Miami's MS in Construction Management program is a practice-oriented advanced graduate degree that offers a blend of construction and business management courses. This degree program is designed to develop leaders and managers for complex building projects, with mastery in best practices related to resiliency, sustainability, building information modeling, project delivery and decision-making. The University is uniquely situated in a booming metropolis where commercial and residential construction is a large and important industry.

The Construction Management Program

- Offers an interdisciplinary approach with the participation of other graduate programs at the University of Miami.
- Prepares graduates for a variety of employment opportunities. Potential employers include general contractors, real estate developers, sub-contractors, construction management firms and architectural engineering firms.

Objective

The MS in Construction Management provides a foundation for those who want to effectively lead a construction project or business.

Who Is the MS Program For?

The program is open to both entry-level graduate students who want to pursue a career in construction management and professionals who have responsibilities in engineering, architecture, business and law fields, and want to further their knowledge and skills.

Industry Advisory Board

One of the differentiators of the MS program is that it is informed by an industrial advisory board with significant experience in construction management. The advisory board currently consists of:

- *Henry E. Adams, Kiewit Corporation*
- *Rodney Barreto, Floridian Partners, LLC; Chairman - Fish & Wildlife Foundation of Florida*
- *Scott Desharnais, Moss Construction*
- *Kobi Karp, Kobi Karp Architecture and Interior Design*
- *Thomas Koulouris, AECOM / Jackson Health Systems*
- *Ana Veiga Milton, President of Jose Milton Foundation*
- *John L. Murphy, DLA Piper LLP (US)*
- *Ari Pearl, South Florida Developer*
- *Jaime S. Saavedra, Turner Construction*
- *Victor Sanchez, Goldman Properties*

Description

Graduates of the program obtain the technical proficiency, financial knowledge, entrepreneurial skills, and business acumen needed for success in this continuously evolving industry.

Graduates of the program will learn how to integrate multiple professional requirements for bringing construction projects to successful completion, including estimating, cost control, risk, new technologies, project planning, scheduling, negotiation and labor relations. Coursework also examines how to manage the various types of contractual relationships governing the owner, the contractor, subcontractors, consultants and architects, as well as the essential skills of bidding, negotiating, handling disputes and claims, devising and implementing strategic business plans, and leadership.

Through consultations with industry leaders, advisory board members, faculty members, and colleagues in the construction industry, the curriculum for the University of Miami's MS-CM is continually evaluated against current best practices and the highest standards. Participants have immediate access to knowledge and skills that address current issues and developments in the industry.

The current director of this program is Dr. Esber Andiroglu. (<http://www.coe.miami.edu/faculty-directory/name/esber-andiroglu/>)

Admission Requirements

All students applying to the graduate program are required to submit GRE scores and three letters of recommendation. All students applying for admission, but most especially International students should consult the College of Engineering Admissions webpages for Prospective MS Students (<https://www.umcoe.miami.edu/apply/prospective-ms-students/>) or PhD Students (<https://www.umcoe.miami.edu/apply/prospective-phd-students/>).

Students who hold a bachelor's degree in a field other than civil, architectural, and environmental engineering may be admitted to the graduate program upon completion of appropriate deficiency courses, in addition to the regular requirements for the graduate degree.

Deficiency courses are as follows:

1. Calculus, 10 semester credits
2. Advanced Mathematics, 6 semester credits
3. General Chemistry, 4 semester credits
4. Physics (with Calculus), 8 semester credits
5. Engineering Mechanics (Statics), 3 semester credits
6. Engineering Science related to area of study, 3 semester credits
7. Engineering Design related to area of study, 6 semester credits

In general, items 1 through 7 apply to students without an undergraduate degree in engineering, and items 6 and 7 apply to students with an undergraduate degree in engineering. The student's graduate committee will select courses for items 6 and 7 on an individual basis.

Curriculum Requirements

Code	Title	Credit Hours
Core Courses		
CAE 660 or ARC 630	Sustainable Construction ¹ Building Technology I: Materials and Methods	3
CAE 661	Computer Aided Architecture Engineering Design	3
CAE 762/IEN 763 or RED 670	Construction Project Management Construction and Project Management	3
CAE 769	Construction Management Capstone Project	3
CAE 765 Or IEN 761	Construction Accounting & Finance Engineering Cost Management	3
CAE 669	Construction Management Seminar	1
LAW 257	CONSTRUCTION LAW	3
Electives		
Sustainable and Resilient Construction Electives:		9
CAE 681	Energy-Efficient Building Design	
CAE 744	Risk Management and Resilience	
CAE 665	Facility Management	
ARC 617	Construction Documents	
RED 601	Introduction to Real Estate Development and Urbanism	
IEN 612	Statistical Quality Control and Quality Management	
IEN 672	Management of Technological Innovation	
ARC 628	Historic Preservation	
ARC 662	Environmental Building Systems I	
ARC 663	Environmental Building Systems II	
ARC 631	Building Technology II: Structural Systems	
RED 660	Urban Redevelopment	
ARC 613	Advanced Visual Representation	
Construction Leadership Elective		2
MGT 617	Leading Across Cultures	
MGT 621	High Performance Leadership	
MGT 624	Negotiation Strategies	

MGT 691	International Management	
Total Credit Hours		30

¹ For Architecture & Engineering Students

Suggested Plan of Study

Year One		Credit Hours
Fall		
CAE 762 or IEN 763	Construction Project Management or Project Management Techniques	3
CAE 660 or ARC 685	Sustainable Construction ¹ or Special Problems	3
Or ARC 630 ²		
CAE 661	Computer Aided Architecture Engineering Design	3
Track 1 Electives		6
Credit Hours		15
Spring		
RED 670	Construction and Project Management	3
CAE 765 Construction Case Studies		3
LAW 257	CONSTRUCTION LAW	3
BUS 630	Fundamentals of Economics, Accounting, and Finance	4
Track 1 Elective ²		
Global Awareness Elective		2
Credit Hours		15
Total Credit Hours		30

Code	Title	Credit Hours
Elective Offering Schedules		
Track 1: Sustainable and Resilient Construction (Fall Semester Courses)		
IEN 612	Statistical Quality Control and Quality Management	3
IEN 672	Management of Technological Innovation	3
ARC 628	Historic Preservation	3
ARC 662	Environmental Building Systems I	3
ARC 663	Environmental Building Systems II	3
RED 601	Introduction to Real Estate Development and Urbanism	3
Track 1: Sustainable and Resilient Construction (Spring Semester Courses)		
IEN 761	Engineering Cost Management	3
ARC 613	Advanced Visual Representation	3
ARC 617	Construction Documents	3
ARC 631	Building Technology II: Structural Systems	3
CAE 681	Energy-Efficient Building Design	3
RED 660	Urban Redevelopment	3
Electives with a Focus on Global Awareness (Fall Semester Courses)		
MGT 691	International Management	2
Electives with a Focus on Global Awareness (Spring Semester Courses)		
MGT 617	Leading Across Cultures	2
MGT 621	High Performance Leadership	2
MGT 624	Negotiation Strategies	2-3

¹ For Students who have not taken CAE 762 or IEN 763 during Fall Semester

² Not required if enrolled in RED 670 during Spring Semester

Mission

The vision of the MS CM program is to provide an interdisciplinary, flexible and state-of-the-art curriculum that provides students with knowledge and marketable skills to become future leaders of construction related organizations worldwide, by utilizing existing infrastructure resources at University of Miami, with program-generated additional resources as necessary.

Goals

Graduates of the program obtain the technical proficiency, financial knowledge, entrepreneurial skills, and business acumen needed for success in this continuously evolving industry.

Student Learning Outcomes

- Students will develop technical professional proficiency
- Students will acquire financial knowledge
- Students will develop entrepreneurial skills