

Master of Science in Civil Engineering Pathway: Construction Engineering and Management (CEM)

REQUIREMENTS

Credit Hours	Thesis	Non-Thesis
Hours in Major	12	18
Hours 6000-9000	12	21
Thesis Hours (minimum)	6*	--
Total Course Hours Required (minimum)	24	30
Total Degree Hours	30	30
Number of P/F Course Hours Allowed	3	3
Number of Transfer Credit Hours Allowed	6	6

MAJOR COURSES (Specialization Courses)		Credit Hours	Semester
CEE 6110	Computer Applications for Construction (Prof. Marks)	3	Fall
CEE 6130	Construction Project Controls (Prof. Marks)	3	Fall (alternating years)
CEE 6140	Advanced Planning Estimating Methods (Prof. Marks)	3	Spring (alternating years)
CEE 6150	Construction Law (TBA)	3	TBA
CEE 8813	Construction Industry Best Practices (Prof. Cho)	3	Fall
CEE 8813	Automation in Construction (Prof. Cho)	3	Fall
CEE 8813	Safety Engineering (Prof. Marks)	3	Spring (alternating years)

**Undergraduate Courses (counted towards hours in major)

CEE 4120	Construction Operations (Prof. Cho)	3	Spring
CEE 4150	Construction Management & Megaprojects (Prof. Ashuri)	3	Spring

Thesis and Research Courses

CEE 7000	Masters Thesis (Section per advisor)	6	all
CEE 8956	Masters Special Research Problem	3	all

***APPROVED ELECTIVES (Not counted towards hours in major)

CEE 8813	Advanced GIS for Smart Cities	3	Spring
CEE 8813	Entrepreneurship & Innovation in CEE	3	Fall
CEE 8813	Quantitative Methods for Construction Research	3	Fall
CEE 6345	Sustainable Engineering	3	
CEE 6540	Engineering Risk Analysis	3	Spring (alternating years)
CEE 6585	Materials Science of Concrete	3	
CEE 6601	Statistics in Transportation	4	
CEE 6621	GIS in Transportation	3	
CEE 6651	Infrastructure Systems	3	
CEE 6652	Infrastructure Management: IT Applications	3	
CEE 6754	Engineering Communications	3	
CEE 8813	Infrastructure, Megacities, and Sustainability	3	
CEE 8813	Data Analytics for CEE Systems	3	Fall (alternating years)
CEE 4050	Infrastructure Systems Management	3	Fall (alternating years)
CEE 4540	Infrastructure Rehabilitation	3	
CEE 4803	Smart and Sustainable Cities	3	Fall (alternating years)

ARCH 6241	Building Simulation Design Practices	3
ARCH 6426	3D Modeling Revit (hands-on)	3
ARCH 8833	Building Systems and Data	3
COA 8690	Building Product Models: Dsgn./Eng. Interoperability	3
CP 6233	Sustainable Urban Development	3
ISYE 6203	Transportation & Supply Chain Systems	3
MGT 6000	Financial and Managerial Accounting I	3
MGT 6753	Principles of Management for Engineers	3
PHIL 6000	Responsible Conduct of Research	3

Undergraduate Requirements

It is expected that in your undergraduate program you have taken the equivalent of the following engineering courses. If you have not taken such courses, you are required to do so. Credit for the following courses will not be counted toward your Master's Degree requirements.

- 1) CEE 3770 (3) – Statistics and Applications
- 2) CEE 3000 (3) – Civil Engineering Systems
- 3) CEE 4100 (3) – Construction Engineering and Management

Notes

* Greater than 6 credits are not counted toward required total degree hours (30).

** These course options are for MS students not for BS/MS students who took the courses in their BS study. BS/MS students can get credits towards major when these courses are taken at the MS level (i.e., it is acceptable as long as the courses are not counted toward their BS study).

*** The availability of approved elective courses to CEE students is subject to the discretion of the college/school/ department offering the course.

CEE 8900 should be considered an “independent study,” with a semester-long focus on course content or a topic. Examples could be replicating course content from a course that is not offered this semester, delivery of a custom-designed course offering, or other similar arrangements. It can be taken as letter-grade.

CEE 8902 should ONLY be used for non-thesis GRAs or GTAs. It cannot count toward a CEE degree.

CEE 8956 should be used for research-based credits for MS non-thesis students. It should be considered similar to CEE 7000. All sections are now pass-fail, and a maximum of three credits can count toward the MS degree.