

Co-Terminal Degree Proposal, Form 802 Attachment
Bachelor of Science in Engineering Management
Master of Engineering in Urban Systems

Undergraduate Program

Undergraduate Program Type: Bachelor of Science in Engineering Management

Total Undergraduate Program Credit Hours (including shared credit): 127-128 hours

Program Description: The program's objective is to prepare students to become leaders in the corporate world shaped by innovations in engineering. Students learn fundamentals of science, engineering management and business administration by concentrating on the development of critical thinking skills directed toward practical problem solving and informed decision making. Students select a concentration from the following engineering disciplines: civil, architectural, materials science, mechanical, electrical and biomedical. The program also includes a business curriculum that focuses on developing organization and management, critical thinking and entrepreneurship skills.

Program Purpose: The co-terminal program between the BS in Engineering Management and Master of Engineering in Urban Systems (MUS) allows students interested in urban system applications to enter the job force very competitively positioned to pursue these opportunities.

Program Benefits: The Master of Engineering in Urban Systems degree was one of six new interdisciplinary engineering degrees approved for Fall 2017. These interdisciplinary degrees reflect contemporary shifts in engineering education and increase the attractiveness of IIT with potential graduate students. By offering these new interdisciplinary graduate degrees as co-terminal programs with our current undergraduate degrees, we are providing our current undergraduate engineering students a path to greater competitiveness while they retain undergraduate financial aid benefits. Furthermore, engineering transfer students often face significant course sequencing challenges within engineering curriculums. Some transfer students solve this problem by pursuing co-terminal programs, and some choose to leave IIT. This co-terminal program will increase the options available to transfer students and potentially improve retention.

Course requirements and sample curriculum: Course requirements and a sample curriculum are included in this document.

Competitive Programs: BS EMGT is a competitive degree offered by many institutions. However, most schools do not offer a co-terminal BS EMGT and MEng Urban Systems.

Market Analysis: BS EMGT is a competitive degree offered by many institutions. The Master of Engineering in Urban Systems is a new degree program (Fall 2017). Please refer to the market analysis for the MUS degree provided in the 2017 degree program application for further information.

Marketing and Advertising: Both degrees are currently marketed. The co-terminal degree will be included in current co-terminal degree marketing and additional marketing by the Armour College of Engineering.

Enrollment Estimates: Estimated enrollment in this co-terminal program is 2-4 new students/year.

Retention Estimates: It is anticipated that retention may be improved for transfer students as the co-terminal program allows more flexibility for scheduling each semester.

Economic Analysis: There are no additional costs for the co-terminal program. It is expected that this co-terminal program will draw from a group of students separate from those who pursue the other EMGT co-terminal programs. Therefore, it is expected that additional tuition revenue will be generated equivalent to 24 credits/student enrolled in the program.

Graduate Program

Graduate Program: Master of Engineering in Urban Systems

Program Overview: With greater emphasis today placed on urban living, the Master of Engineering in Urban Systems Engineering program prepares students to rise to the challenges of designing and maintaining tomorrow's smart, sustainable cities. Core courses provide a solid knowledge base upon which to launch specializations in urban transportation systems, urban building systems, or the monitoring and control of urban systems. Students can also add on a variety of electives ranging from legal considerations to construction issues to real estate fundamentals. There are three tracks: (a) Urban Transport Systems (b) Urban Building Systems, or (c) Monitoring & Control of Urban Systems.

Program Justification: The Armour College of Engineering is committed to be a lifelong educational partner with our community, from pre-college to professional advancement. The MUS degree program contributes to this commitment by enhancing the overall offerings within the Armour College of Engineering. It is anticipated that approximately 8 students will enroll in the MUS program Fall 2018. The BS co-terminal degree is anticipated to add 2-4 additional students. A detailed justification for the MUS program can be found in the 2017 MUS degree application.

Program Resources: The co-terminal program does not require additional resources. The MUS curriculum includes existing courses and a few new courses that will be developed according to program demand.

Program description: A detailed list of courses required for each track in the co-terminal degree follows. Students should have a 3.0 GPA in order to be accepted into the co-terminal program. Students will be accepted into the program beginning Fall 2018.

Description of courses shared between Undergraduate and Graduate programs:

a) Shared required courses: none

b) Shared elective courses:

UG: (2) Free elective courses as GRAD: (2) Core CAE Courses

c) Course substitutions or exceptions:

Students are responsible for ensuring that any prerequisite courses are completed prior to enrolling in required courses in the co-terminal program of study.

Bachelor of Science in Engineering Management

Required Courses	Credit Hours		
	UG	grad	total
Master of Engineering in Urban systems Core Requirements (18 cr) CAE 523, 574, 575, CHE 543, ENGR 531/CAE 558, ENGR 532/CAE 559	6	18	18
Urban Transportation Systems Specialization^a (4 courses) CAE 534, 544, 546, 548, 549, 555, 568, ECE 512, 544	0	12	12
Urban Building Systems Specialization^a (4 courses) CAE 513, 515, 521, 526, 527, 528, 550, 556, 557, MMAE 515	0	12	12
Monitoring & Control of Urban Building Systems Specialization^a (4 courses) CAE 527, 528, 580, ECE 504, MMAE 543	0	12	12
Master of Engineering in Urban systems Electives^a (9 cr) Additional courses from any specialization	0	9	9
Mathematics/ Computer Science Requirements MATH 151, 152, 251, 252, CS 104 or 105	20	0	20
Introduction to the Profession	2	0	2
Physics Requirements PHYS 123, 221	8	0	8
Chemistry Requirements	3-4	0	3-4
Computer Science Requirements CS 104 or 105	2	0	2
Core Engineering Specialization	28	0	28
Core Entrepreneurship Requirements BUS 211, 212, 301, 371, BUS 305, 361, CAE 312, COM 421, 428, ECON 423, EMGT 363, 407, 470, INTM 404, 477, MMAE 232 (minimum of 4)	24	0	24
Core Engineering or Entrepreneurship Technical Elective	9	0	9
Free Elective	6	6	6
Humanities and Social Science Requirements	21	0	21
I PRO	6	0	6
Total	127-128	30	151-152

(131 EMGT UG) + 30 (MUS) -6 (shared credits) = 155 (total)

^ashared courses between undergraduate and graduate curricula (6 cr)
(2) CAE MUS courses as (2) UG free electives