

IOWA STATE UNIVERSITY

Ivy College of Business

College of Engineering

Proposal for an Engineering/MBA Concurrent Degree

Major in Construction Engineering

Name of the Program/Degrees

The departments in Business Administration and in Civil, Construction and Environmental Engineering propose offering a collaborative program culminating in a Bachelor of Science degree in Construction Engineering (CON E) and a Master of Business Administration (MBA) degree.

The Engineering/MBA concurrent degree is currently available to aerospace, agricultural, biological systems civil, chemical, computer, electrical, industrial, mechanical, and software engineering majors. This proposal seeks to add the construction engineering major to the MBA concurrent degree.

The Engineering/MBA concurrent degree program began in 2004. 164 engineering students have enrolled in the program to date. Engineering/MBA concurrent degree students have experienced outstanding employment success with nearly 100% obtaining at least one job offer at graduation.

Name of Departments Administering the Program

Department of Civil, Construction and Environmental Engineering, College of Engineering

Department of Business Administration, Ivy College of Business

Rationale for the CON E/MBA Concurrent Degree Program

Today's successful engineers need a solid understanding of business, particularly as their careers progress. Engineering students, even in their internship and entry level positions, are often exposed to business applications in areas such as financial and economic analysis, managing staff, marketing and technical sales, data analytics, information technology, international business, and supply chain management. In addition, the MBA degree may give engineers a competitive advantage for promotion or lead to an accelerated management track within their companies.

The CON E/MBA concurrent degree equips students with technical and analytical skills as engineers along with a broad knowledge of business. Important soft skills such as collaboration, communications, interpersonal, problem-solving, creativity, and leadership are further enhanced in the concurrent degree program both inside and outside the classroom. Students graduating from engineering with an MBA have the knowledge and skills that are highly sought from company recruiters.

Requirements for the CON E/MBA Concurrent Degree Program

The CON E/MBA concurrent degree program is designed to be completed in a minimum of five academic years or ten semesters. In the first three years, construction engineering students progress through their prescribed course requirements. The final two years are comprised of the remaining construction engineering major course work and graduate-level business classes. Construction engineering students may graduate, having completed their BS degree requirements, in semesters 7-10 of the concurrent degree program.

The appendix illustrates a sample ten-semester study plan for the CON E/MBA concurrent degree under the 2019-2020 Catalog. While the program can be completed in five years, the actual time for completion may be longer depending upon semester course loads, coops/internships, study abroad experiences, and course sequencing.

Degree requirements for the BS in construction engineering and the MBA are unchanged in the proposed CON E/MBA concurrent degree. The BS in construction engineering and the MBA require a minimum of 126-127 credit hours, depending upon the emphasis, and 48 credit hours respectively. The concurrent program requires a minimum of 165-166 credit hours including nine credit hours applied toward both the BS and MBA degrees.

MBA Admission Procedures and Requirements

The Engineering/MBA concurrent degree is a rigorous 5-year program, and admission is selective. Candidates are expected to exhibit superior intellectual ability, strong leadership attributes, and must be highly motivated and career-focused. Significant internship/coop experience is expected.

Construction engineering students interested in the concurrent degree program must apply to the MBA no later than July 1 the summer prior to their senior year. MBA admission is only considered for fall semester entry.

The following application materials are required:

- Application for an ISU Undergraduate Student Wishing to Pursue a Concurrent Graduate Degree
- Official transcripts
- GMAT (preferred) or GRE scores
- Letters of recommendation (2)
- Essays (2)
- Resume
- Admissions interview (by invitation only)

Expected Enrollment

2-3 construction engineering students per year

Financial Assistance

Depending upon funding availability, Engineering/MBA Scholarships may be available to admitted CON E/MBA students who meet the eligibility requirements. Performance-based scholarships are awarded during the MBA program as well.

Graduate assistantships are very competitive but may be awarded to highly-qualified students in the fifth year of the CON E/MBA concurrent degree program.

Proposal Contacts

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BS in CON E (building emphasis)/MBA Sample Study Plan (2019-2020 Catalog)

Year 1 - Freshman					
Semester 1	15 cr		Semester 2	16 cr	
MATH 165	4 cr		MATH 166	4 cr	
CHEM 167	4 cr		C E 170	2 cr	
C E 160	3 cr		PHYS 221	5 cr	
ENGL 150	3 cr		ENGL 250	3 cr	
CON E 121	1 cr		CON E 122	1 cr	
ENGR 101	R cr		LIB 160	1 cr	
Year 2 – Sophomore					
Semester 3	17 cr		Semester 4	14 cr	
CON E 222	3 cr		CON E 241	3 cr	
C E 111	3 cr		CON E 251	1 cr	
Math or Stat Elective	3 cr		MATH 267	4 cr	
PHYS 222	5 cr		E M 274	3 cr	
SSH Elective (ECON 101 or 102)*	3 cr		I E 305	3 cr	
Year 3 - Junior					
Semester 5	18 cr		Semester 6	16 cr	
CON E 352	3 cr		CON E 340	3 cr	
CON E 353	3 cr		CON E 322	3 cr	
STAT 231 or 305**	3 cr		Law Elective (CON E 380 or ACCT 215)	3 cr	
E M 324	3 cr		C E 360	3 cr	
E M 378	3 cr		C E 332	3 cr	
SSH Elective (PSYCH 101/230/250/280 or SOC 134)	3 cr		E M 327	1 cr	
Year 4 – Senior/Concurrent MBA					
Semester 7	18 cr		Semester 8	18 cr	
ACCT 501	3 cr		FIN 501	3 cr	
ECON 532	3 cr		MKT 501	3 cr	
MGMT 502	3 cr		SCM 501	3 cr	
BUSAD 592	R cr		MIS 501	3 cr	
CON E 422	3 cr		BUSAD 594	R cr	
CON E 441	3 cr		C E 333	3 cr	
Bus. Comm. Elective (ENGL 302, 309, or 314)	3 cr		SSH Elective (International)	3 cr	
Year 5 – Senior/Concurrent MBA					
Semester 9	16 cr		Semester 10	18 cr	
MGMT 503	3 cr		MBA Elective	3 cr	
MGMT 504	3 cr		MBA Elective	3 cr	
MBA Elective	3 cr		MBA Elective	3 cr	
CON E 487	3 cr	(Both degrees)	CON E 488	3 cr	(Both degrees)
C E 334	3 cr		Engineering Topics Elective***	3 cr	(Both degrees)
C E 383	1 cr		SSH Elective (US Diversity)	3 cr	

* ECON 101 is recommended, but not required, for a Gen Ed course as a prerequisite to ECON 532 in the MBA program. (Instructor permission to waive ECON 101 prerequisite.)

** BUSAD 502 *Quantitative Business Analysis* waived if "B" or higher grade is earned in STAT 231 or 305.

*** CON E and MBA advisers' approval required.

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BS in CON E (electrical emphasis)/MBA Sample Study Plan (2019-2020 Catalog)					
Year 1 - Freshman					
Semester 1	15 cr		Semester 2	16 cr	
MATH 165	4 cr		MATH 166	4 cr	
CHEM 167	4 cr		C E 170	2 cr	
C E 160	3 cr		PHYS 221	5 cr	
ENGL 150	3 cr		ENGL 250	3 cr	
CON E 121	1 cr		CON E 122	1 cr	
ENGR 101	R cr		LIB 160	1 cr	
Year 2 – Sophomore					
Semester 3	17 cr		Semester 4	14 cr	
CON E 222	3 cr		CON E 241	3 cr	
C E 111	3 cr		CON E 251	1 cr	
Math or Stat Elective	3 cr		MATH 267	4 cr	
PHYS 222	5 cr		E M 274	3 cr	
SSH Elective (ECON 101 or 102)*	3 cr		I E 305	3 cr	
Year 3 - Junior					
Semester 5	16 cr		Semester 6	16 cr	
CON E 352	3 cr		Law Elective (CON E 380 or ACCT 215)	3 cr	
CON E 353	3 cr		E E 230	4 cr	
STAT 231 or 305**	3 cr		E E 303	3 cr	
E M 324	3 cr		E M 378	3 cr	
E E 201	4 cr		SSH Elective (PSYCH 101/230/250/280 or SOC 134)	3 cr	
Year 4 – Senior/Concurrent MBA					
Semester 7	18 cr		Semester 8	18 cr	
ACCT 501	3 cr		FIN 501	3 cr	
ECON 532	3 cr		MKT 501	3 cr	
MGMT 502	3 cr		SCM 501	3 cr	
BUSAD 592	R cr		MIS 501	3 cr	
CON E 422	3 cr		BUSAD 594	R cr	
CON E 441	3 cr		EE 457 C E 332	3 cr	
Bus. Comm. Elective (ENGL 302, 309, or 314)	3 cr		SSH Elective (International)	3 cr	
Year 5 – Senior/Concurrent MBA					
Semester 9	18 cr		Semester 10	18 cr	
MGMT 503	3 cr		MBA Elective	3 cr	
MGMT 504	3 cr		MBA Elective	3 cr	
MBA Elective	3 cr		MBA Elective	3 cr	
CON E 487	3 cr	(Both degrees)	CON E 488	3 cr	(Both degrees)
E E 456	3 cr		Engineering Topics Elective***	3 cr	(Both degrees)
SSH Elective (US Diversity)	3 cr		E E 457	3 cr	

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** BUSAD 502 *Quantitative Business Analysis* waived if "B" or higher grade is earned in STAT 231 or 305.

*** CON E and MBA advisers' approval required.

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BS in CON E (mechanical emphasis)/MBA Sample Study Plan (2019-2020 Catalog)					
Year 1 - Freshman					
Semester 1	15 cr		Semester 2	16 cr	
MATH 165	4 cr		MATH 166	4 cr	
CHEM 167	4 cr		C E 170	2 cr	
C E 160	3 cr		PHYS 221	5 cr	
ENGL 150	3 cr		ENGL 250	3 cr	
CON E 121	1 cr		CON E 122	1 cr	
ENGR 101	R cr		LIB 160	1 cr	
Year 2 – Sophomore					
Semester 3	17 cr		Semester 4	14 cr	
CON E 222	3 cr		CON E 241	3 cr	
C E 111	3 cr		CON E 251	1 cr	
Math or Stat Elective	3 cr		MATH 267	4 cr	
PHYS 222	5 cr		E M 274	3 cr	
SSH Elective (ECON 101 or 102)*	3 cr		I E 305	3 cr	
Year 3 - Junior					
Semester 5	18 cr		Semester 6	16 cr	
CON E 352	3 cr		Law Elective (CON E 380 or ACCT 215)	3 cr	
CON E 353	3 cr		E E 442	2 cr	
STAT 231 or 305**	3 cr		E E 448	2 cr	
E M 324	3 cr		C E 332	3 cr	
M E 231	3 cr		E M 378	3 cr	
SSH Elective (PSYCH 101/230/250/280 or SOC 134)	3 cr		SSH Elective (US Diversity)	3 cr	
Year 4 – Senior/Concurrent MBA					
Semester 7	18 cr		Semester 8	18 cr	
ACCT 501	3 cr		FIN 501	3 cr	
ECON 532	3 cr		MKT 501	3 cr	
MGMT 502	3 cr		SCM 501	3 cr	
BUSAD 592	R cr		MIS 501	3 cr	
CON E 422	3 cr		BUSAD 594	R cr	
CON E 441	3 cr		M E 442 436	3 cr	
Bus. Comm. Elective (ENGL 302, 309, or 314)	3 cr		SSH Elective (International)	3 cr	
Year 5 – Senior/Concurrent MBA					
Semester 9	18 cr		Semester 10	16 cr	
MGMT 503	3 cr		MBA Elective	3 cr	
MGMT 504	3 cr		MBA Elective	3 cr	
MBA Elective	3 cr		MBA Elective	3 cr	
CON E 487	3 cr	(Both degrees)	CON E 488	3 cr	(Both degrees)
Engineering Topics Elective***	3 cr	(Both degrees)	M E 436 442	4 cr	
M E 441	3 cr				

* ECON 101 is recommended, but not required, for a Gen Ed course as a prerequisite to ECON 532 in the MBA program. (Instructor permission to waive ECON 101 prerequisite.)

** BUSAD 502 *Quantitative Business Analysis* waived if "B" or higher grade is earned in STAT 231 or 305.

*** CON E and MBA advisers' approval required.

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BS in CON E (heavy/highway emphasis)/MBA Sample Study Plan (2019-2020 Catalog)					
Year 1 - Freshman					
Semester 1	15 cr		Semester 2	16 cr	
MATH 165	4 cr		MATH 166	4 cr	
CHEM 167	4 cr		C E 170	2 cr	
C E 160	3 cr		PHYS 221	5 cr	
ENGL 150	3 cr		ENGL 250	3 cr	
CON E 121	1 cr		CON E 122	1 cr	
ENGR 101	R cr		LIB 160	1 cr	
Year 2 – Sophomore					
Semester 3	17 cr		Semester 4	14 cr	
CON E 222	3 cr		CON E 241	3 cr	
C E 111	3 cr		CON E 251	1 cr	
Math or Stat Elective	3 cr		MATH 267	4 cr	
PHYS 222	5 cr		E M 274	3 cr	
SSH Elective (ECON 101 or 102)*	3 cr		I E 305	3 cr	
Year 3 - Junior					
Semester 5	18 cr		Semester 6	16 cr	
CON E 322	3 cr		CON E 340	3 cr	
Law Elective (CON E 380 or ACCT 215)	3 cr		CON E 422 CE 382	3 cr	
STAT 231 or 305**	3 cr		C E 360	3 cr	
E M 324	3 cr		C E 332	3 cr	
E M 378	3 cr		E M 327	1 cr	
SSH Elective (PSYCH 101/230/250/280 or SOC 134)	3 cr		SSH Elective (US Diversity)	3 cr	
Year 4 – Senior/Concurrent MBA					
Semester 7	18 cr		Semester 8	18 cr	
ACCT 501	3 cr		FIN 501	3 cr	
ECON 532	3 cr		MKT 501	3 cr	
MGMT 502	3 cr		SCM 501	3 cr	
BUSAD 592	R cr		MIS 501	3 cr	
CE 382 CON E 422	3 cr		BUSAD 594	R cr	
CON E 441	3 cr		C E 333	3 cr	
Bus. Comm. Elective (ENGL 302, 309, or 314)	3 cr		SSH Elective (International)	3 cr	
Year 5 – Senior/Concurrent MBA					
Semester 9	18 cr		Semester 10	15 cr	
MGMT 503	3 cr		MBA Elective	3 cr	
MGMT 504	3 cr		MBA Elective	3 cr	
MBA Elective	3 cr		MBA Elective	3 cr	
CON E 487	3 cr	(Both degrees)	CON E 488	3 cr	(Both degrees)
C E 334	3 cr		Engineering Topics Elective***	3 cr	(Both degrees)
Engineering Topics Elective	3 cr				

* ECON 101 is recommended, but not required, for a Gen Ed course as a prerequisite to ECON 532 in the MBA program. (Instructor permission to waive ECON 101 prerequisite.)

** BUSAD 502 *Quantitative Business Analysis* waived if "B" or higher grade is earned in STAT 231 or 305.

*** CON E and MBA advisers' approval required.

MBA Course Requirements	Credits	Comments
MBA core courses	27 cr.	Excluding BUSAD 502 (waived with grade of B or better in STAT 231 or 305)
MBA elective courses	12 cr.	Must be 500 level courses offered in the Ivy College of Business
Engr. Topics Elective	3 cr.	CON E and MBA advisers' approval required.
CON E 487 and 488	6 cr.	Construction engineering design project
Total	48 cr,	