

Civil Engineering and Business Administration, BSCE (Boston)

The combined major in civil engineering and business is designed to educate students in topics of both disciplines and the interface between them. Civil engineering deals with designing, constructing, and operating systems that include structures, infrastructure, facilities for hazardous materials and their remediation, the environment, people, and the management of associated large-scale projects. A combined degree with the D'Amore-McKim School of Business enables students to develop the skills needed to lead in today's technologically driven world and integrate entrepreneurial skills into their practice. The curriculum combines knowledge in both civil engineering fundamentals and business management principles, offering students an opportunity to develop the critical thinking, creativity, and business perspective required to become leaders in a profession addressing increasingly complex societal problems.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (<https://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/>).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (<https://catalog.northeastern.edu/undergraduate/university-academics/nupath/>).

NUpath requirements: Interpreting Culture (IC), Engaging Differences and Diversity (DD), and Integrating Knowledge and Skills Through Experience (EX) are not explicitly satisfied by required engineering coursework. Successful completion of a cooperative education experience fulfills the EX requirement. Students are responsible for satisfying unfulfilled NUpath requirements with general elective coursework.

Engineering Requirements

Code	Title	Hours
Required Engineering		
CIVE 2221 and CIVE 2222	Statics and Solid Mechanics and Recitation for CIVE 2221	4
CIVE 2260 and CIVE 2261	Materials for the Built Environment and Lab for CIVE 2260	5
CIVE 2320 and CIVE 2321	Structural Analysis and Recitation for CIVE 2320	4
CIVE 2324 or CIVE 3425	Concrete Structure Design Steel Structure Design	4
CIVE 2331	Fluid Mechanics and Hydraulics	4
CIVE 2334	Environmental Engineering: Principles, Technology, and Sustainability	4
CIVE 2340 and CIVE 2341	Geotechnical Engineering and Lab for CIVE 2340	5
GE 3300	Energy Systems: Science, Technology, and Sustainability	4
Civil Engineering Project Elective		
Complete one of the following:		4
CIVE 4534 and CIVE 4535	Water Treatment Systems Design and Lab for CIVE 4534	
CIVE 4542	Foundation Engineering and Design	
CIVE 4554	Highway Design	
CIVE 5536	Hydrologic and Hydraulic Design	
Senior Design Project		
Complete one of the following:		5
CIVE 4765	Senior Design Project—Environmental	
CIVE 4767	Senior Design Project—Structural	
CIVE 4768	Senior Design Project—Transportation	
Supplemental Credit		
2 semester hours from the following counts toward the engineering requirement:		2
GE 1501	Cornerstone of Engineering 1 ¹	

3 semester hours from the following counts toward the engineering requirement: 3

GE 1502 Cornerstone of Engineering 2¹**Business Requirements**

Code	Title	Hours
Required Business Courses		
ACCT 1201	Financial Accounting and Reporting	4
ECON 1115 or ECON 1116	Principles of Macroeconomics Principles of Microeconomics	4
Required Business Electives		
Complete three of the following:		12
ACCT 2301	Profit Analysis for Managers and Advisors	
FINA 2201	Financial Management	
INNO 2301	Innovation!	
INTB 1203	International Business and Global Social Responsibility	
MISM 2301	Introduction to Information Systems and Digital Technologies	
MKTG 2201	Introduction to Marketing	
ORGB 3201 or ORGB 3203	Organizational Behavior Behavioral Aspects of Digital Transformation	
SCHM 2301	Supply Chain and Operations Management	
STRT 4501	Strategy in Action	

Supporting Courses: Mathematics/Science

Complete all mathematics/science courses with a minimum of 30 semester hours.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MGSC 2301	Business Statistics	4
Complete one of the following:		5
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161	
Science Elective		
Complete one of the following:		4-5
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
BIOL 1141	Microbes and Society	
BIOL 1143	Biology and Society	
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	
CHEM 3410	Environmental Geochemistry	
EEMB 1101 and EEMB 1102	Foundations in Ecology and Evolutionary Biology and Lab for EEMB 1101	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
ENVR 1200	Dynamic Earth	
ENVR 2200	Earth's Changing Cycles	

ENVR 2515	Sustainable Development
ENVR 3125	Global Oceanic Change
ENVR 3200	Water Resources
ENVR 3600	Oceanography
ENVR 5350	Sustainable Energy and Climate Solutions
PHYS 1111	Introduction to Astronomy
PHYS 1125	Introduction to Network Science: From the Human Cell to Facebook
PHYS 1132	Energy, Environment, and Society
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155
PHYS 4623	Medical Physics

Supplemental Credit

1 semester hour from the following counts toward the mathematics/science requirement:		1
GE 1501	Cornerstone of Engineering 1 ¹	

Business Concentration Requirement

Complete one of the following:

- Accounting (<https://catalog.northeastern.edu/undergraduate/business/concentrations/accounting/>)
- Accounting and Advisory Services (<https://catalog.northeastern.edu/undergraduate/business/concentrations/accounting-advisory-services/>)
- Brand Management (<https://catalog.northeastern.edu/undergraduate/business/concentrations/brand-management/>)
- Business Analytics (<https://catalog.northeastern.edu/undergraduate/business/concentrations/business-analytics/>)
- Corporate Innovation (<https://catalog.northeastern.edu/undergraduate/business/concentrations/corporate-innovation/>)
- Entrepreneurial Startups (<https://catalog.northeastern.edu/undergraduate/business/concentrations/entrepreneurial-startups/>)
- Finance (<https://catalog.northeastern.edu/undergraduate/business/concentrations/finance/>)
- Fintech (<https://catalog.northeastern.edu/undergraduate/business/concentrations/fintech/>)
- Healthcare Management and Consulting (<https://catalog.northeastern.edu/undergraduate/business/concentrations/healthcare-management-consulting/>)
- Management (<https://catalog.northeastern.edu/undergraduate/business/concentrations/management/>)
- Management Information Systems (<https://catalog.northeastern.edu/undergraduate/business/concentrations/management-information-systems/>)
- Marketing (<https://catalog.northeastern.edu/undergraduate/business/concentrations/marketing/>)
- Marketing Analytics (<https://catalog.northeastern.edu/undergraduate/business/concentrations/marketing-analytics/>)
- Social Innovation and Entrepreneurship (<https://catalog.northeastern.edu/undergraduate/business/concentrations/social-innovation-entrepreneurship/>)
- Supply Chain Management (<https://catalog.northeastern.edu/undergraduate/business/concentrations/supply-chain-management/>)

Professional Development

Code	Title	Hours
Professional Development		
ENCP 2000	Introduction to Engineering Co-op Education	1
ENCP 3000	Professional Issues in Engineering	1
GE 1000	First-Year Seminar	1
Additional Required Courses		
1 semester hour from the following counts toward the professional development requirement:		1
GE 1501	Cornerstone of Engineering 1 ¹	
1 semester hour from the following counts toward the professional development requirement:		1
GE 1502	Cornerstone of Engineering 2 ¹	

¹ Students can substitute Engineering Design (GE 1110 (<https://catalog.northeastern.edu/search/?P=GE%201110>)) and Engineering Problem Solving and Computation (GE 1111 (<https://catalog.northeastern.edu/search/?P=GE%201111>)) for Cornerstone of Engineering 1 (GE 1501 (<https://catalog.northeastern.edu/search/?P=GE%201501>)) and Cornerstone of Engineering 2 (GE 1502 (<https://catalog.northeastern.edu/search/?P=GE%201502>)).

Writing Requirements

Code	Title	Hours
A grade C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302 or ENGW 3315 or ENGW 3304	Advanced Writing in the Technical Professions Interdisciplinary Advanced Writing in the Disciplines Advanced Writing in the Business Administration Professions	4

Required General Electives

Code	Title	Hours
Complete 4 semester hours of academic, nonremedial, nonrepetitive courses. This class must complete the DD and IC NUpath requirements.		4

Integrative Courses

Code	Title	Hours
The courses below fulfill the Integrative Courses requirement. Students complete one of these courses as part of the Engineering Requirements.		
CIVE 4765	Senior Design Project—Environmental	
CIVE 4767	Senior Design Project—Structural	
CIVE 4768	Senior Design Project—Transportation	

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Major GPA Requirement

2.000 minimum GPA required in CIVE and business coursework

Program Requirement

135 total semester hours required

Plan of Study**Sample Plans of Study****FOUR YEARS, ONE CO-OP IN SUMMER SESSION B/FALL**

Year 1							
Fall	Hours	Spring	Hours	Summer Session A	Hours	Summer Session B	Hours
CHEM 1151 (ND)		4 GE 1502 (ER)		4 CIVE 2221 and CIVE 2222		4 Vacation	
CHEM 1153		0 MATH 1342 (FQ)		4 ECON 1115 or 1116 (SI, AD)		4	
ENGW 1111 (WF)		4 PHYS 1151 (ND)		3			
GE 1000		1 PHYS 1152 (AD)		1			
GE 1501		4 PHYS 1153		1			
MATH 1341 (FQ)		4 General electives (IC & DD)		4			
		17		17		8	0
Year 2							
Fall	Hours	Spring	Hours	Summer Session A	Hours	Summer Session B	Hours
ACCT 1201		4 CIVE 2320 and CIVE 2321		4 CIVE 2324		4 Co-op	0
CIVE 2260 and CIVE 2261 (AD)		5 CIVE 2331		4 MATH 2341		4	
CIVE 2334		4 ENCP 2000		1			
MATH 2321 (FQ)		4 MGSC 2301 (AD)		4			
		Required business elective 1		4			
		17		17		8	0

Year 3

Fall	Hours	Spring	Hours	Summer Session A	Hours	Summer Session B	Hours
Co-op		0 CIVE 2340 and CIVE 2341		5 Vacation		Vacation	
		GE 3300		4			
		Required business elective 2		4			
		Business concentration 1		4			
		0		17		0	0

Year 4

Fall	Hours	Spring	Hours
ENGW 3302 or 3315 (WD)		4 CIVE 4765, 4767, or 4768 (EI, CE, WI)	5
ENCP 3000		1 Science elective	4
Required business elective 3		4 Business concentration 3	4
Business concentration 2		4 Business concentration 4	4
Civil project elective (WI)		4	
		17	17

Total Hours: 135

FOUR YEARS, ONE CO-OP IN SPRING/SUMMER SESSION A

Year 1

Fall	Hours	Spring	Hours	Summer Session A	Hours	Summer Session B	Hours
CHEM 1151 (ND)		4 GE 1502 (ER)		4 CIVE 2221 and CIVE 2222		4 Vacation	
CHEM 1153		0 MATH 1342 (FQ)		4 ECON 1115 or 1116 (SI, AD)		4	
ENGW 1111 (WF)		4 PHYS 1151 (ND)		3			
GE 1000		1 PHYS 1152 (AD)		1			
GE 1501		4 PHYS 1153		1			
MATH 1341 (FQ)		4 General electives (IC & DD)		4			
		17		17		8	0

Year 2

Fall	Hours	Spring	Hours	Summer Session A	Hours	Summer Session B	Hours
ACCT 1201		4 CIVE 2260 and CIVE 2261 (AD)		5 Vacation		MATH 2341	4
CIVE 2331		4 CIVE 2320 and CIVE 2321		4		Required business elective 2	4
CIVE 2334		4 MGSC 2301 (AD)		4			
ENCP 2000		1 Required business elective 1		4			
MATH 2321 (FQ)		4					
		17		17		0	8

Year 3

Fall	Hours	Spring	Hours	Summer Session A	Hours	Summer Session B	Hours
CIVE 2324		4 Co-op		0 Co-op		0 Vacation	
CIVE 2340 and CIVE 2341		5					
Business concentration 1		4					
Science elective		4					
		17		0		0	0

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Year 4			
Fall	Hours	Spring	Hours
ENGW 3302 or 3315 (WD)		4 CIVE 4765, 4767, or 4768 (EI, CE, WI)	5
ENCP 3000		1 GE 3300	4
Required business elective 3		4 Business concentration 3	4
Business concentration 2		4 Business concentration 4	4
Civil project elective (WI)		4	
	17		17

Total Hours: 135