

Environmental Engineering and Landscape Architecture, BSEnvE

Environmental engineering and landscape architecture are two important disciplines that deal with the complex interaction between the natural and the built environment. Both professions have critical functions that are essential in the development of society in terms of planning and designing more sustainable cities. The combination of these two professions creates great synergy and seeks to expose engineering students to the conceptual and practical content of landscape planning. Successful graduates from this degree are prepared to imagine and create projects that can be translated into reality providing solutions to address the world's growing challenges by designing clean and sustainable environments and green infrastructure.

Students completing the combined major Bachelor of Science in Environmental Engineering and Landscape Architecture receive a rigorous engineering training education, enabling a high level of engineering knowledge as well as exposure to a broad range of landscape architectural topics and design experiences.

Students will also have the opportunity to undertake a co-op experience consistent with the policies and opportunities offered within the College of Engineering.

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 (<http://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/>).

NUpath Requirements

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

For this combined major, Nupath requirements are satisfied in several courses across the program and by required courses in the combined major.

Engineering Requirement

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 2331	Fluid Mechanics and Hydraulics	4
CIVE 2334	Environmental Engineering: Principles, Technology, and Sustainability	4
CIVE 3435	Environmental Pollution Fate and Transport	4
CIVE 4534 and CIVE 4535	Water Treatment Systems Design and Lab for CIVE 4534	4
CIVE 5300 and CIVE 5301	Environmental Sampling and Analysis and Lab for CIVE 5300	4
GE 3300	Energy Systems: Science, Technology, and Sustainability	4
Senior Design Project		
CIVE 4765	Senior Design Project—Environmental	5
Supplemental Credit		
1 semester hour from the following course counts toward the engineering requirement:		1
CIVE 3464	Probability and Engineering Economy for Civil Engineering	
3 semester hours from the following course count toward the engineering requirement:		3
CIVE 2335	Environmental Engineering Chemistry	
3 semester hours from the following course count toward the engineering requirement:		3
CIVE 3430	Engineering Microbiology and Ecology	
2 semester hours from the following course count toward the engineering requirement:		2
GE 1501	Cornerstone of Engineering 1 ¹	

2 Environmental Engineering and Landscape Architecture, BSEnVE

3 semester hours from the following course count toward the engineering requirement: 3

GE 1502	Cornerstone of Engineering 2 ¹	
---------	---	--

Landscape Architecture Requirements

Code	Title	Hours
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1120	Fundamental Architectural Design	6
ARCH 1310 and ARCH 1311	Buildings and Cities, A Global History and Recitation for ARCH 1310	4
ARCH 2340 and ARCH 2341	Modern Architecture and Recitation for ARCH 2340	4
LARC 2230	Introduction to Sustainable Site Planning and Design	4
LARC 2240	Sustainable Site Construction and Detailing	4
LARC 2430	Plants, People, and Landscape Change	4
LARC 2440	Planting Design	4
LARC 5420 or LARC 2340	Professional Practice in Landscape Architecture Cities, Landscape, and Contemporary Culture	4

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
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 (Earth)

Complete one of the following: 4-5

ENVR 1120	Oceans and Coasts	
ENVR 1200	Dynamic Earth	
ENVR 2200	Earth's Changing Cycles	
ENVR 3125	Global Oceanic Change	
ENVR 3200	Water Resources	
ENVR 3600	Oceanography	
ENVR 5201	Geologic Field Seminar	

Supplemental Credit

3 semester hours from the following course count toward the mathematics/science requirement: 3

CIVE 3464	Probability and Engineering Economy for Civil Engineering	
-----------	---	--

1 semester hour from the following course counts toward the mathematics/science requirement: 1

CIVE 2335	Environmental Engineering Chemistry	
-----------	-------------------------------------	--

1 semester hour from the following course counts toward the mathematics/science requirement: 1

CIVE 3430	Engineering Microbiology and Ecology	
-----------	--------------------------------------	--

1 semester hour from the following course counts toward the mathematics/science requirement: 1

GE 1501	Cornerstone of Engineering 1 ¹	
---------	---	--

Professional Development

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

Writing Requirements

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

Integrative Courses

Code	Title	Hours
This course is already required above and also fulfills the integrative requirement.		
CIVE 4765	Senior Design Project—Environmental	

Engineering GPA Requirement

Minimum 2.000 GPA required in all major courses

Landscape Architecture GPA Requirement

Minimum 2.500 GPA required in all major courses

Program Requirements

136 total semester hours required

¹ Students can substitute GE 1110 and GE 1111 for GE 1501 and 1502 in approved situations.

Plan of Study**Four Years, 1 Co-op in Summer 2/Fall**

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
CHEM 1151 (ND)		4 ARCH 1110 (EI)		4 MATH 2321 (FQ)		4 Vacation		
CHEM 1153	0	ARCH 1120 (EI, ND)		6 PHYS 1151 (ND)		3		
ENGW 1111 (WF)	4	GE 1502 (ER)		4 PHYS 1152 (AD)		1		
GE 1000	1	MATH 1342 (FQ)		4 PHYS 1153		1		
GE 1501	4							
MATH 1341 (FQ)	4							
	17		18		9		0	
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
CIVE 2334	4	ARCH 1310 (IC, DD)		4 CIVE 2221		4 Co-op		
LARC 2230 (ND)	4	ARCH 1311		0 CIVE 2222		0		
LARC 2430 (ND)	4	CIVE 2260		4 GE 3300		4		
MATH 2341	4	CIVE 2261 (AD)		1				
		CIVE 2335		4				
		CIVE 3430		4				

		ENCP 2000		1				
	16			18		8		0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		ARCH 2340 (IC, SI, WI)		4 Vacation		Vacation		
		ARCH 2341		0				
		CIVE 2331		4				
		LARC 2240		4				
		LARC 2440		4				
	0			16		0		0
Year 4								
Fall	Hours	Spring	Hours					
CIVE 3435	4	CIVE 4765 (EI, CE, WI)	5					
CIVE 3464	4	CIVE 5300	2					
CIVE 4534 (WI)	3	CIVE 5301	2					
CIVE 4535	1	LARC 5420 or 2340 (IC, SI, WI)	4					
ENCP 3000	1	Science Elective (Earth)	4					
ENGW 3302 or 3315 (WD)	4							
	17		17					

Total Hours: 136

Five Years, 3 Co-ops in Summer 2/Fall

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
CHEM 1151 (ND)	4	ARCH 1110 (EI)	4	MATH 2321 (FQ)	4	Vacation	4	
CHEM 1153	0	ARCH 1120 (EI, ND)	6	PHYS 1151 (ND)	3			
ENGW 1111 (WF)	4	GE 1502 (ER)	4	PHYS 1152 (AD)	1			
GE 1000	1	MATH 1342 (FQ)	4	PHYS 1153	1			
GE 1501	4							
MATH 1341 (FQ)	4							
	17		18		9			0
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
CIVE 2334	4	ARCH 1310 (IC, DD)	4	CIVE 2221	4	Co-op	4	
LARC 2230 (ND)	4	ARCH 1311	0	CIVE 2222	0			
LARC 2430 (ND)	4	CIVE 2260	4	GE 3300	4			
MATH 2341	4	CIVE 2261 (AD)	1					
		CIVE 2335	4					
		CIVE 3430	4					
		ENCP 2000	1					
	16		18		8			0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		CIVE 2331	4	Vacation	4	Co-op	4	
		CIVE 3435	4					
		LARC 2440	4					
		Science Elective (Earth)	4					
	0		16		0			0
Year 4								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		ARCH 2340 (IC, SI, WI)	4	Vacation	4	Co-op	4	

ARCH 2341	0
CIVE 4534 (WI)	3
CIVE 4535	1
ENCP 3000	1
ENGW 3302 or 3315 (WD)	4
LARC 2240	4
0	17

Year 5

Fall	Hours	Spring	Hours
Co-op		CIVE 3464	4
		CIVE 4765 (EI, CE, WI)	5
		CIVE 5300	2
		CIVE 5301	2
		LARC 5420 or 2340 (IC, SI, WI)	4
	0		17

Total Hours: 136