

# Bachelor of Science in Environmental Engineering

Learn more about the Bachelor of Science in Environmental Engineering (<https://www.temple.edu/academics/degree-programs/environmental-engineering-major-en-enve-bsen>).

## Goals, Objectives & Design Integration

Environmental engineering professionals work at the interface of human society and the natural environment, aiming to find solutions to the world's challenges of air, land, and water pollution and sustainability. The environmental engineering curriculum at Temple University provides a fully-integrated design experience within a multidisciplinary learning environment. Students begin their undergraduate studies with courses in advanced mathematics, chemistry, and physics, as well as engineering. As they progress, the coursework becomes more discipline specific and includes topics such as water and wastewater treatment, air pollution control, environmental hydrology, stormwater management, and others.

Through laboratory courses, students will gain hands-on experience in environmental chemistry and microbiology, as well as with the physical-chemical processes utilized in water and wastewater treatment. The program culminates with a year-long senior design project where students work in interdisciplinary teams to tackle an engineering design project. The goals of the environmental engineering program are to prepare students to pursue an environmental engineering career in design, project planning or research, graduate education in their specific areas of interest, and to pass the required exams to obtain professional licensure.

## Summary of Requirements

### University Requirements

All new students are required to complete the university's General Education (GenEd (<http://bulletin.temple.edu/undergraduate/general-education>)) curriculum.

All Temple students must take a minimum of two writing-intensive courses for a total of at least six credits. The writing-intensive course credits are counted as part of the major; they are not General Education (GenEd) or elective credits. The writing-intensive courses must be completed at Temple University and students may not transfer in credits to satisfy this requirement. The specific writing-intensive courses required for this major are:

Code	Title	Credit Hours
ENGR 2196 or ENGR 2996	Technical Communication Honors Technical Communication by Design	3
ENGR 4296 or ENGR 4996	Senior Design Project II Honors Senior Design Project II	3

### Department Requirements

Code	Title	Credit Hours
<b>Required Math &amp; Basic Science Courses</b>		
MATH 1041 or MATH 1941	Calculus I Honors Calculus I	4
MATH 1042 or MATH 1942	Calculus II Honors Calculus II	4
MATH 2043 or MATH 2943	Calculus III Honors Calculus III	4
MATH 3041 or MATH 3941	Differential Equations I Honors Differential Equations I	3
CEE 3048	Probability, Statistics & Stochastic Methods	3
PHYS 1061 or PHYS 1961	Elementary Classical Physics I Honors Elementary Classical Physics I	4
PHYS 1062 or PHYS 1962	Elementary Classical Physics II Honors Elementary Classical Physics II	4
CHEM 1031 or CHEM 1951	General Chemistry I Honors General Chemical Science I	3
CHEM 1032 or CHEM 1952	General Chemistry II Honors General Chemical Science II	3

CHEM 1033 or CHEM 1953	General Chemistry Laboratory I Honors Chemical Science Laboratory I	1
CHEM 1034 or CHEM 1954	General Chemistry Laboratory II Honors Chemical Science Laboratory II	1
<b>Required General Education Courses</b>		
Select one of the following:		4
ENG 0802	Analytical Reading and Writing	
ENG 0812	Analytical Reading and Writing: ESL	
ENG 0902	Honors Literature/Reading/Writing	
IH 0851 or IH 0951	Intellectual Heritage I: The Good Life Honors Intellectual Heritage I: The Good Life	3
IH 0852 or IH 0952	Intellectual Heritage II: The Common Good Honors Intellectual Heritage II: The Common Good	3
GenEd 08xx or 09xx (U.S. Society)		3
GenEd 08xx or 09xx (Global/World Society)		3
GenEd 08xx or 09xx (Human Behavior)		3
GenEd 08xx or 09xx (The Arts)		3
GenEd 08xx or 09xx (Race and Diversity)		3
<b>Required Environmental Engineering Courses</b>		
CEE 2712	Introduction to Environmental Engineering	3
CEE 2715	Principles of Sustainable Engineering	3
CEE 3712	Environmental Fluids and Contaminant Dynamics	3
CEE 3715	Microbiological Principles of Environmental Engineering	3
CEE 3717	Chemical Principles of Environmental Engineering	3
CEE 3725	Water Quality and Analysis Lab	1
CEE 3727 or CEE 4631	Environmental Hydrology and Stormwater Management Environmental Hydrology	3
CEE 4711	Air Pollution Control System	3
CEE 4721	Water and Wastewater Systems Design	3
CEE 4722	Water/Wastewater Lab	1
CEE 4725	Environmental Systems Design	3
CEE 4741	Professional Issues I	1
CEE 4742	Professional Issues II	1
CEE/ENGR Technical Elective		3
CEE 4000+ Technical Elective		3
Free Elective		6
<b>Required Engineering Courses</b>		
ENGR 1101 or ENGR 1901	Introduction to Engineering & Engineering Technology Honors Introduction to Engineering	3
ENGR 1102	Introduction to Engineering Problem Solving	3
ENGR 1117	Engineering Graphics	2
ENGR 2196 or ENGR 2996	Technical Communication Honors Technical Communication by Design	3
ENGR 2334	Engineering Statics/Dynamics	3
ENGR 3001	Engineering Economics	3
ENGR 3033	Entrepreneurial Engineering	3
ENGR 4169	Engineering Seminar	1
ENGR 4173	Senior Design Project I for Environmental Engineering	2
ENGR 4296 or ENGR 4996	Senior Design Project II Honors Senior Design Project II	3
Total Credit Hours		128

## Suggested Academic Plan

Please note that this is a **suggested** academic plan. Depending on your situation, your academic plan may look different.

### Bachelor of Science in Environmental Engineering

#### Requirements for New Students starting in the 2018-2019 Academic Year

Year 1		Credit Hours
<b>Fall</b>		
ENGR 1101 or 1901	Introduction to Engineering Engineering Technology	3
MATH 1041 or 1941	Calculus I	4
CHEM 1031 or 1951	General Chemistry I	3
CHEM 1033 or 1953	General Chemistry Laboratory I	1
ENGR 0802, 0812, or 0902	Analytical Reading and Writing [GW]	4
	Term Credit Hours	15
<b>Spring</b>		
ENGR 1117	Engineering Graphics	2
MATH 1042 or 1942	Calculus II	4
CHEM 1032 or 1952	General Chemistry II	3
CHEM 1034 or 1954	General Chemistry Laboratory II	1
PHYS 1061 or 1961	Elementary Classical Physics I	4
ENGR 1102	Introduction to Engineering Problem Solving	3
	Term Credit Hours	17
<b>Year 2</b>		
<b>Fall</b>		
ENGR 2334	Engineering Statics/Dynamics	3
PHYS 1062 or 1962	Elementary Classical Physics II	4
MATH 2043 or 2943	Calculus III	4
CEE 2712	Introduction to Environmental Engineering	3
IH 0851 or 0951	Intellectual Heritage I: The Good Life [GY]	3
	Term Credit Hours	17
<b>Spring</b>		
ENGR 2196 or 2996	Technical Communication [WI]	3
MATH 3041 or 3941	Differential Equations I	3
CEE 2715	Principles of Sustainable Engineering	3
IH 0852 or 0952	Intellectual Heritage II: The Common Good [GZ]	3
Free Elective		3
	Term Credit Hours	15
<b>Year 3</b>		
<b>Fall</b>		
CEE 3712	Environmental Fluids and Contaminant Dynamics	3
CEE 3715	Microbiological Principles of Environmental Engineering	3
CEE 3725	Water Quality and Analysis Lab	1
CEE 3717	Chemical Principles of Environmental Engineering	3
CEE/ENGR Technical Elective		3
GenEd Breadth Course		3
	Term Credit Hours	16
<b>Spring</b>		
ENGR 3001	Engineering Economics	3
ENGR 4169	Engineering Seminar	1
CEE 3048	Probability, Statistics Stochastic Methods	3
CEE 4721	Water and Wastewater Systems Design	3
CEE 4722	Water/Wastewater Lab	1

GenEd Breadth Course		3
Select one of the following:		3
CEE 3727	Environmental Hydrology and Stormwater Management	
CEE 4631	Environmental Hydrology	
Term Credit Hours		17
<b>Year 4</b>		
<b>Fall</b>		
CEE 4725	Environmental Systems Design	3
CEE 4741	Professional Issues I	1
CEE 4711	Air Pollution Control System	3
ENGR 4173	Senior Design Project I for Environmental Engineering	2
GenEd Breadth Course		3
GenEd Breadth Course		3
Term Credit Hours		15
<b>Spring</b>		
ENGR 3033	Entrepreneurial Engineering	3
ENGR 4296 or 4996	Senior Design Project II [WI]	3
CEE 4742	Professional Issues II	1
GenEd Breadth Course		3
CEE 4000+ Technical Elective		3
Free Elective		3
Term Credit Hours		16
Total Credit Hours:		128

Approved Technical Electives