

2019-2020 Catalog

Bachelor of Science in Environmental Engineering

This document corresponds to a Catalog Term of Fall 2016. Determine your Catalog Term by performing a Degree Evaluation in Trailhead. Important: this document is an advising tool for students and faculty -- not an official document. Students are responsible for complying with all graduation requirements as stated in the CSM Catalog that corresponds to their Catalog Term.

LEGEND

	Required by the CSM Core Curriculum
	Distributed Science Courses
	Assessed for ABET Accreditation

‡ indicates a course that applies to the in-major GPA. In addition to a 2.0 minimum overall GPA, students must maintain a 2.0 minimum in-major GPA for graduation.

FRESHMAN YEAR	FALL	4.0 hr. MATH 111 Calculus for Scientists and Engineers I	4.0 hr. GEGN 101 Earth and Environmental Systems	4.0 hr. CHGN 121 Principles of Chemistry I	0.5 hr. CSM 101 Freshman Success Seminar	4.0 hr. HASS 100 Nature and Human Values	0.5 hr. PAGN Physical Education (any PAGN course)
	SPRING	4.0 hr. MATH 112 Calculus for Scientists and Engineers II <i>Pre-req: C or better in MATH 111</i>	4.5 hr. PHGN 100 Physics I - Mechanics <i>Co-req: MATH 112</i>	4.0 hr. CHGN 122 Principles of Chemistry II <i>Pre-req: C- or better in CHGN 121</i>	3.0 hr. EDNS 151 Introduction to Design		0.5 hr. PAGN Physical Education (any PAGN course)
SOPHOMORE YEAR	FALL	4.0 hr. MATH 213 Calculus for Scientists and Engineers III <i>Pre-req: C or better in MATH 112</i>	4.5 hr. PHGN 200 Physics II - Electromagnetism & Optics <i>Pre-req: C- in PHGN 100; Co-req MATH 213</i>	3.0 hr. CEEN 241 Statics <i>Pre-req: PHGN 100 and co-req: MATH 112</i>	2.0 hr. MATH 307 (Matlab), CSCI 260 (Fortran), or CSCI 261 (C++) <i>Pre-req: Varies</i>	3.0 hr. EDNS 261 or CEEN 267* The Practice of Design <i>Pre-req: EDNS 151</i>	0.5 hr. PAGN Physical Education (any PAGN course)
	SPRING	3.0 hr. MATH 225 Differential Equations <i>Pre-req: C or better in MATH 112</i>	3.0 hr. EBGN 201 Principles of Economics	3.0 hr. CEEN 311‡ Mechanics of Materials <i>Pre-req: CEEN 241</i>	3.0 hr. CEEN 310‡ Fluid Mechanics for Civil & Env. Eng. <i>Pre-req: CEEN 241</i>	3.0 hr. HASS 200 Human Systems <i>Pre-req: HASS 100</i>	0.5 hr. PAGN Physical Education (any PAGN course)
JUNIOR YEAR	FALL	3.0 hr. CEEN 301‡ Fund. of Env. Sci. & Eng. I <i>Co-req: CHGN 122, PHGN 200, & MATH 213</i>	3.0 hr. CEEN 381‡ Hydro. and Water Resources Eng. <i>Pre-req: CEEN 310</i>	3.0 hr. MATH 201 Probability and Statistics for Engineers <i>Pre-req: MATH 213</i>	3.0 hr. Thermodynamics: CHGN 209 or CBEN 210, or MEGN 361 <i>Pre-req: VARIES, see Catalog for details.</i>	3.0 hr. HASS/EBGN**** Mid-level 2/300 Requirement <i>Co-req: HASS 200</i>	
	SPRING	3.0 hr. CEEN 302‡ Fund. of Env. Sci. & Eng. II <i>Pre-req: CHGN 122, PHGN 100, & MATH 213</i>	3.0 hr. CEEN 303‡ Environmental Eng. Laboratory <i>Pre-req: CEEN 301 or CEEN 302</i>	3.0 hr. ENV. ELECT.*** Environmental Eng. Elective	3.0 hr. BIOSCIENCE ELECT.‡** <i>Pre-req: Varies</i>	3.0 hr. HASS/EBGN**** Mid-level 2/300 Requirement <i>Co-req: HASS 200</i>	
SUMMER		3.0 hr. CEEN 330‡ Environmental Eng. Field Session <i>Pre-req: CEEN 303</i>					
SENIOR YEAR	FALL	3.0 hr. CEEN 482‡ Hydro. & Water Resources Lab. <i>Pre-req: CEEN 381</i>	3.0 hr. CEEN 480‡ Chem. Fate & Transp. In the Env. <i>Pre-req: CEEN 301</i>	3.0 hr. CEEN 470‡ Water and Wastewater Treat. Proc. <i>Pre-req: CEEN 301</i>	3.0 hr. EDNS 491 Senior Design I <i>Pre-req: CEEN 330</i>	3.0 hr. ENV. ELECT.*** Environmental Eng. Elective	3.0 hr. FREE Free Elective
	SPRING		3.0 hr. ENV. ELECT.*** Environmental Eng. Elective	3.0 hr. ENV. ELECT.*** Environmental Eng. Elective	3.0 hr. EDNS 492 Senior Design II <i>Pre-req: EDNS 491</i>	3.0 hr. FREE Free Elective	3.0 hr. HASS/EBGN**** 400 Level Requirement <i>Co-req: HASS 200</i>

Notes:

* Can also be fulfilled with EDNS 251, 261, 262 or CEEN 262.

** Select either BIOL 110‡ (Biology), CEEN 461‡ (Fundamentals of Ecology), CHGN 462‡ (Microbiology), or CEEN 460‡ (Molecular Microbial Ecology).

*** The list of courses that can be used as Environmental Engineering Electives is on the reverse side of this document.

**** The list of classes that qualify for this requirement is revised yearly and posted on the CSM website. At least one of the 3 courses must be at the 400-level; at least one must have an HASS prefix.

134.5 Credit Hours



Environmental Engineering Electives

- CEEN 312[‡] SOIL MECHANICS
- CEEN 401 LIFE CYCLE ASSESSMENT
- CEEN 402 PROJECT ENGINEERING
- CEEN 405[‡] NUMERICAL METHODS FOR ENGINEERS
- CEEN 410[‡] ADVANCED SOIL MECHANICS
- CEEN 460[‡] MOLECULAR MICROBIOLOGY ECOLOGY AND THE ENVIRONMENT
- CEEN 461[‡] FUNDAMENTALS OF ECOLOGY (if not used for the Biosci. Elect.)
- CEEN 471[‡] WATER AND WATERWATER TREATMENT SYSTEMS ANALYSIS & DESIGN
- CEEN 472[‡] ONSITE WATER RECLAMATION AND REUSE
- CEEN 474[‡] SOLID WASTE MINIMIZATION AND RECYCLING
- CEEN 475[‡] SITE REMEDIATION ENGINEERING
- CEEN 476[‡] POLLUTION PREVENTION: FUNDAMENTALS AND PRACTICE
- CEEN 477[‡] SUSTAINABLE ENGINEERING DESIGN
- CHGN 403 INTRODUCTION TO ENVIRONMENTAL CHEMISTRY
- CHGN 462 MICROBIOLOGY
- EBGN 321 ENGINEERING ECONOMICS
- ENGY 320 RENEWABLE ENERGY
- GEGN 466 GROUNDWATER ENGINEERING
- GEGN 473 GEOLOGICAL ENGINEERING SITE INVESTIGATION
- GEGN 475 APPLICATIONS OF GEOGRAPHIC INFORMATIONS SYSTEMS
- CEEN 479[‡] AIR POLLUTION
- CEEN 498[‡] SPECIAL TOPICS COURSES - ADVISOR PRE-APPROVAL REQUIRED
- CEEN 5xx GRADUATE LEVEL COURSES - ADVISOR PRE-APPROVAL REQUIRED

Combined BS + MS Program

In this program, students can receive the Bachelor's degree in Environmental Engineering and the Master's degree in Civil and Environmental Engineering in just five years. Key advantages of this program include early provisional acceptance into graduate school and the ability to earn credit towards the graduate degree while still enrolled as an undergraduate. Contact Cassie Glenn (caungst@mines.edu) for detailed information.

Prerequisite / Corequisite Relationships for Selected Courses

 prerequisite
 corequisite

