

2025-2026 Environmental Engineering Topic Electives

Students must take 6 credits from the courses listed below. Courses are organized by sub-discipline to help students identify courses of interest, but all count toward the engineering topics requirement.

NOTE:

1. Courses that appear on multiple lists, shown below with **yellow shading**, may NOT be double counted.
2. The student is responsible for checking and abiding by the ISU catalog regarding official course details.
3. Students may propose a course not on this list by petitioning the ENVE Curriculum Committee. The course must conform to the definitions of [engineering science or engineering design](#) as stated by ABET, the ENVE program’s accrediting body.

Course	CR	Title	Typically Offered	Pre-requisites
ABE 3880 CE 3880 EE 3880	3	Sustainable Engineering and International Development	F	Junior Classification in an Engineering Major
ABE 4310/5310 ENSCI 5310	3	Design and Evaluation of Soil and Water Conservation Systems	F	EM 3780 or CHE 3560
ABE 4320/5320 ENSCI 5320	3	Nonpoint Source Pollution and Control	S	ABE 4310 or CE 3720
ABE 4370/5370 ENSCI 5370	3	Watershed Modeling and Policy	F	CE 3720
ABE 4780/5780	3	Wood Frame and Agri-Industrial Structures	S (odd)	EM 3240
AERE 5690 EM 5690 MSE 5690	3	Mechanics of Composite and Combined Materials	S (even)	EM 3240
AGRON 2700 ENSCI 2700	3	Geospatial Technologies	S	
AGRON 3180 BIOL 3180 ENSCI 3180 NREM 3180	3	Introduction to Ecosystems	S	12 credits in AECL, AGRON, BIOL, CHEM, FOR, GEOL, or NREM

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AGRON 4040/5040 ENSCI 4040/5040 ENVE 4040/5040 MTEOR 4040/5040	3	Global Change	F, S	
BIOL 3190 ENSCI 3190 ENVS 3190	3	Analysis of Environmental Systems	S	ENSCI 3120 and junior classification
BIOL 4640 EEOB 5640 ENSCI 4640/5640	3	Wetland Ecology	F, S, SS	15 credits in BIOL
CE 3320	3	Structural Analysis I	F, S, SS	EM 3240
CE 3550	3	Principles of Transportation Engineering	F, S	CE 1110
CE 3820	3	Design of Concretes	F, S	CE 2740
CE 4130/5130 ENSCI 4130/5130 GEOL 4130/5130	3	Applied and Environmental Geophysics	S (odd)	
CE 4390/5390 GEOL 4390/5390	3	Seismic Methods in Geology, Engineering, and Petroleum Exploration	S (even)	
CE 4600	3	Foundation Engineering	F, S	CE 3600
CE 4730/5730 ENSCI 5730	3	Groundwater Hydrology	F	CE 3720
CE 4900 CONE 4900 ENVE 4900	1-3	Independent Study – with a contract between the student and instructor	F, S, SS	Department Permission *Repeatable with a maximum of 6 credits applied as Engineering Topic Electives
CE 5200 ENSCI 5200	3	Environmental Engineering Chemistry		(CE 3260 and CHEM 1780) or Graduate classification
CE 5210 ENSCI 5210	3	Environmental Biotechnology		CE 3260 or Graduate classification
CE 5220 ENSCI 5220	3	Water Pollution Control Processes		CE 5210 or Graduate classification

Course	CR	Title	Typically Offered	Pre-requisites
CE 5230 ENSCI 5230	3	Physical-Chemical Treatment Process		(ENVE 4260 or ABE 4510 or AGRON 4590 or CE 5200 or ENSCI 3820) or permission of instructor
CHE 2100	3	Material and Energy Balances	F, S	CHEM 1780, MATH 1660, CHE 1600
CONE 3800	3	Engineering Law	F	Junior classification
CRP 2510	3	Fundamentals of Geographic Information Systems	F	
CRP 2930 ENVS 2930	3	Environmental Planning	F, S	
CRP 4510	3	Introduction to Geographic Information Systems	F, S, SS	
CRP 4600/5600	3	Social Justice and Planning	S (even)	
CRP 4840/5840 ENVS 4840	3	Sustainable Communities	S	Junior classification
CRP 4910/5910 ENVS 4910 LA 4910/5910	3	Environmental Law and Planning	S	6 credits natural sciences or permission of instructor
EM 4240	3	Intermediate Mechanics of Materials	F, S	EM 3240
EM 4250	3	Introduction to the Finite Element Method	S	EM 3240 and (MATH 2660 or MATH 2670)
ENGR 2650	3	Survey of the Impacts of Engineering Activity	F, S	
ENGR 3270	3	Voices of Public Policy	F	Sophomore classification in engineering
ENSCI 3240 ENVS 3240 GEOL 3240 MTEOR 3240	3	Energy and the Environment	S	
ENSCI 3450 NREM 3450	3	Natural Resource Photogrammetry and Geographic Info Systems	S	Junior classification

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ENSCI 4020/5020 GEOL 4020/5020 MTEOR 4020/5020 NREM 4020/5020	3	Watershed Hydrology	F	
ENSCI 4070/5070 ENVS 4070/5070 NREM 4070/5070	4	Watershed Management	S	1 course in BIOL
ENSCI 4110/5110 GEOL 4110/5110	4	Hydrogeology	S	
ENSCI 4140/5140 GEOL 4140/5140	3	Applied Groundwater Flow Modeling	S (even)	(GEOL 4110 or CE 4730) and MATH 1650
ENSCI 4160/5160 GEOL 4160/5160 MTEOR 4160/5160	3	Hydrologic Modeling and Analysis	S (odd)	
ENSCI 4190/5190 GEOL 4190/5190	3	Aqueous and Environmental Geochemistry	S (even)	CHEM 1780 and CHEM 1780L
IE 3610 STAT 3610	3	Statistical Quality Assurance	F, S	STAT 2310 or STAT 3010 or STAT 3260 or STAT 5870
MATE 2730	3	Principles of Materials Science and Engineering	F, S	MATH 1650 and (CHEM 1670 or CHEM 1770)
ME 3320	3	Engineering Thermodynamics II	F, S, SS	ME 2310
ME 3450	3	Engineering Dynamics	F, S	CE 2740 and (credit or enrollment in MATH 2660 or MATH 2670)
ME 4330	3	Alternative Energy	F	CHEM 1670, (PHYS 2320 or PHYS 2320H), PHYS 2320L
POLS 4430/5430	3	Energy Policy	F	Sophomore classification
SCM 3010	3	Supply Chain Management		ECON 1010
SCM 4600	3	Decision Tools for Logistics and Operations Management		SCM 3010

*F = Fall, S = Spring, SS = Summer

Approved by the ENVE Curriculum Committee
Updated 8/20/25