North Carolina State University

ENVIRONMENTAL ENGINEERING CURRICULUM

Degree Earned: B.S. in Environmental Engineering (14ENEBS)

Department of Civil, Construction, and Environmental Engineering

For students entering NCSU **after** July 2025 (Fall 25)

(CP) Critical Path major specific course predictive of student success

FRESHMAN YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CH 101 Chemistry - A Molecular Science[1]	3	GEP Requirement (GEP Humanities)[3,4]	3
CH 102 General Chemistry Laboratory[1]	1	EC 205 Fundamentals of Economics (GEP Req)	3
E 101 Introduction to Engr & Prob. Solving[1,2]	1	MA 241 Calculus II[1]	4
E 115 Intro to Computing Environments[1,2]	1	PY 205 Physics for Engineers & Scientists I[1]	3
ENG 101 Academic Writing and Research[1,2]	4	PY 206 Physics for Engineers & Scientists I Lab[1]	1
MA 141 Calculus I[1,2]	4	E 102 Engineering in the 21st Century (GEP Req)	2
HESF 1XX Fitness & Wellness Course	1		
Total:	15	*Total:*	16
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CE 214 Engineering Mechanics – Statics[2]	3 (CP)[5]	BIO 183 Intro. Biology: Cellular and Molecular Bio.	4
CE 250 Introduction to Sustainable Infrastructure[2]	3 (CP)[5]	CE 373 Fundamentals of Environmental Eng	3 (CP)[5]
CH 201 Chemistry – A Quantitative Science	3	CHE 205 Chemical Proc Principles	4
MA 242 Calculus III	4	MA 341 Applied Differential Equations I	3
CSC 111 Intro to Computing: PYTHON	3	CE 282 Hydraulics[2]	3 (CP)[5]
HES XXX Phys Ed/Healthy Living Course	1		
Total:	17	*Total:*	17
JUNIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CE 378 Environmental Chemistry & Microbiology	4	CE 381 Hydraulics Sys Meas Lab	1
PY 208 Physics for Engineers & Scientists II	3	CE 383 Hydrology & Urban Water Sys	3
PY 209 Physics for Engineers & Scientists II Lab	1	CE 339 Civil Engineering Systems	3
ST 370 Probability & Statistics for Engr	3	COM 110 Public Speaking (GEP Req)	3
Earth Science Elective[6]	3	ENE Technical Breadth Elective I[8]	3
Env. and Society Elective (Soc Sci GEP Req)[7]	3	TDE 220 Civil Engineering Graphics OR GIS 280 Intro to Geographic Info Systems	3
Total:	17	*Total:*	16
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CE 488 Water Resource Engineering	3	ENE Senior Elective II[9]	3
Air Elective (CE 476[F] OR CE 479[S])	3	CE 481 Environmental Engineering Project	3
ENE Senior Elective I[9]	3	ENE Senior Elective III[9]	3
CE 484 Water Supply & Waste Water Systems	3	ENE Technical Breadth Elective II[8]	3
GEP Requirement (*GEP Elective*)[4]	3	GEP Requirement (GEP Interdisciplinary Persp.)[4]	3
Total:	15	*Total:*	15
Minimum Credit Hours Required for Graduation: 128			

Major/Program Footnotes:

[1] Courses required for Change of Degree Audit (CODA). CH 101, 102; MA 141, 241; PY 205, 206 must be completed with C or higher.

[2] Minimum grade of C-, E 115 requires satisfactory completion (S).

[3] Course must be from any category except Visual and Performing Arts.

[4] GEP Requirements to be selected from the appropriate lists found on NCSU website.

[5] CP = Critical Path major specific course predictive of student success.

[6] Select from MEA 323, SSC 442 (Prereq of SSC 200 is waived for ENE students)

[7] Environment and Society Elective (Select one)- PS 320, PS 336, ARE 309, NR 460

[8] Select 2 ENE Technical Breadth Electives from the following options:

a. ENE Senior Electives shown in footnote 9 (no double counting).

b. Civil engineering electives relevant to environmental engineering from approved list.

c. Environmental breadth electives from approved list.

d. Undergraduate thesis CE 499 (requires a faculty research advisor).

[9] Select 3 ENE Senior Electives from approved list (note that 500-level courses often require instructor permission).

CIVIL, CONSTRUCTION, AND ENVIRONMENTAL ENGINEERING

Course Listing with Pre- and Corequisites

Degree[1]	Design?[2]	No.	Title	Hours	Semester[3]	Pre- & Co- requisites[4]
200-Level Required Courses						
C, Co, E		CE 214	Engineering Mechanics - Statics	3	F/S	C or better in PY 205 and MA 241, CoReq: MA 242
C, E		CE 250	Intro to Sustainable Infrastructure	3	F/S	CE or ENE majors only; CoReq: CSC 111, CE 214
C, Co, E		CE 225	Solid Mechanics	3	F/S	MA 242, C- or better in CE 214
C, Co, E		CE 282	Hydraulics	3	F/S	C- or better in CE 214; CoReq: MA 341, MA 305 or ST 370
C, Co		CE 263	Intro to Construction Engineering	3	F	CE or CON majors only; CoReq: CSC 111, CE 214
Coastal Engineering & Water Resources						
E		CE 381	Hydraulics Syst Meas Lab	1	F/S	CoReq: CE 282
C, Co, E		CE 383	Hydrology & Urban Water Sys	3	F/S	C- or better in CE 282; CoReq: ST 370; CE, ENE, CON Majors
C, Co, E		CE 487	Intro To Coastal & Ocean Engr	3	S	CE 282; Senior Standing
C, E	D	CE 488	Water Resources Engineering	3	F	CE 339, CE 383
Computing and Systems						
C, Co, E		CE 339	Civil Engineering Systems	3	S	CSC 111 & (MA 341 or MA 305); Junior Standing
C, E		CE 436[6]	Intro Num. Methods for Civil Engr	3	S	CSC 111, MA 341
C, E		CE 437	Civil Engineering Computing	3	F	CSC 111 & (MA 341 or MA 305); Senior Standing
Construction Engineering						
Co		CE 365	Construction Equip & Methods	3	S	CoReq: CE 214 and ST 370
C, Co		CE 367	Mech & Elec Sys in Buildings	3	S	C- or better in CE 282
Co		CE 463	Construction Est, Planning, & Ctrl	3	F	C-or better in CE 263, CE 365, TDE 220
C, Co	D	CE 466	Building Construction Engr	3	F	CoReq: CE 327 (take in Fall/Sprg Jr. Yr.)
Co		CE 464	Legal Aspects of Contracting	3	S	CE 463; CoReq: CE 365
Environmental Engineering						
E		CHE 205	Chemical Process Principles	3	F/S	MA 241/PY 205/CH 201
C, Co, E		CE 373	Fund of Environmental Engr	3	F/S	CoReq: (CE 250 or CE 263) and (CHE 205 or CE 282)
E		CE 378	Environ Chem & Microbiology	4	F	C- or better in CE 250 and CE 373, BIO 183; CoReq ST 370, CHE 205[7]
C, E		CE 472[6]	Res Methods for Global Env Health	3	F	CE 282 OR CHE 311 OR MAE 308
C, E		CE 475	Renewable Energy and the Grid	3	S	CE 250; Senior Standing
C, E	D	CE 476	Air Pollution Control	3	F	CE 373, MAE 201; CoReq: ST 370 or CHE 450
C, Co, E		CE 478	Energy and Climate	3	F	Senior Standing
C, Co, E		CE 479	Air Quality	3	S	CE 373, CE 282 or CHE 311 or MEA 421; CoReq: ST 370
C, Co, E	D	CE 484	Water Supply & Waste Water	3	F	CE 373, CE 282
C, E		CE 489[6]	Global Water, Sanitation, Hygiene	3	F	CE 282 OR CHE 311 OR MAE 308
Geotechnical Engineering						
C, Co, E		CE 342	Engr Behav of Soils & Found	4	F/S	C- or better in CE 225 and CE 282
C, Co, E	D	CE 435	Engineering Geology	3	Varies[5]	C- or better in CE 342
C, Co, E	D	CE 443	Seepage, Embank, & Retain Str	3	Varies[5]	C- or better in CE 342
C, Co, E	D	CE 444	Intro to Foundation Engr	3	Varies[5]	C- or better in CE 342
Structural Engineering						
C, Co, E		CE 325	Structural Analysis	3	F/S	CSC 111, C- or better in CE 225
C, Co, E		CE 327	Reinforced Concrete Design	3	F/S	C- or better in CE 225
C, Co, E	D	CE 426	Structural Steel Design	3	F/S	C- or better in CE 225
Transportation Engineering						
C, Co, E		CE 305	Traffic Engineering	3	F/S	C- or better in CE 250 or CE 263; CoReq: ST 370
C, Co		CE 401	Transportation Systems Engr	3	F	C- or better in CE 305
C, Co	D	CE 402	Traffic Operations	3	F	C- or better in CE 305
C, Co	D	CE 403	Highway Design	3	S	C- or better in CE 305
C, Co		CE 404	Airport Planning and Design	3	F even yrs	CE 305
C, Co		CE 405	Railroad Sys Planning, Des, & Oper	3	S odd yrs	C- or better in CE305
C, Co	D	CE 413	Principles of Pavement Design	3	F	CE 332, CE 342
Other Engineering Courses in Curricula						
C, Co, E		CE 301	Civil Engr Surveying & Geomatics	3	F/S	CE 225; CoReq: ST 370
C, Co		CE 332	Civil Engineering Materials	4	F/S	MSE 200, C- or better in CE 225
C, Co, E		CE 5XX	Various 500-level courses can be used[8]	3	F/S	Varies, Graduate standing or permission of instructor
Capstone Courses						
C		CE 420	Structural Engineering Project	3	F/S	C -or better in CE 325, CE 327, CE 342, CE 426
C		CE 450	Civil Engineering Project	3	F/S	CE 305, CE 342, CE 383; CoReq: one of CE 402, CE 403, CE 413, CE 435, CE 443, CE 444, or CE 488,
Co		CE 469	Construction Engineering Project	3	S	CE 463; CoReq: CE 464
E		CE 481	Environmental Engineering Project	3	S	CE 378, CE 383; CoReq: CE 484 & two of CE 476, CE 479, or CE 488

[1] C = Elective or requirement in CE curriculum, Co = Elective or requirement in CON curriculum, E = Elective or requirement in ENE curriculum

[2] Select design (D) courses following the requirements of the CE Worksheet from two different specialty areas. These designations only apply to the CE curriculum.

[3] Note the semester courses are offered in your course planning, F = Fall only, S = Spring only, F/S = Fall and Spring.

[4] Unless specifically described as a corequisite, requirements listed here are prerequisites. Co-requisites may be taken *before or during* the semester they are required

[5] Courses are offered in a three semester rotation.

[6] Courses are in the process of getting course number, may show up as CE 497 until the process is finalized.

[7] New prerequisites that are expected to become active for the Fall 2026 offering.

[8] Undergraduate students can take select 500-level courses for undergraduate credit or ABM double credit. Consult advisor for questions