

North Carolina State University  
**CIVIL ENGINEERING CURRICULUM**

Degree Earned: B.S. in Civil Engineering (14CEBS)  
Department of Civil, Construction, and Environmental Engineering  
For students entering NCSU Department **after** July 2024 (Fall 24)  
(CP) Critical Path major specific course predictive of student success

FRESHMAN YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CH 101 Chemistry, A Molecular Science <sup>1</sup>	3	EC 205 Economics (GEP Req)	3
CH 102 General Chemistry Laboratory <sup>1</sup>	1	MA 241 Calculus II	4
E 101 Introduction to Engr & Prob. Solving <sup>1,2</sup>	1	PY 205 Physics for Engineers & Scientists I <sup>1</sup>	3
E 115 Intro to Computing Environments <sup>1,2</sup>	1	PY 206 Physics for Engineers & Scientists I Lab <sup>1</sup>	1
ENG 101 Academic Writing and Research <sup>1,2</sup>	4	E 102 Engineering in the 21 <sup>st</sup> Century (GEP Req)	2
MA 141 Calculus I	4	GEP Requirement <sup>3</sup>	3
HESF 1XX Fitness & Wellness Course	1		
<i>Total:</i>	15	<i>Total:</i>	16
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CE 214 Engineering Mechanics – Statics <sup>2</sup>	3 (CP) <sup>4</sup>	CE 225 Mechanics of Solids <sup>2</sup>	3 (CP) <sup>4</sup>
CE 250 Introduction to Sustainable Infrastructure <sup>2</sup> <b>OR</b> CE 263 Intro to Construction Engineering <sup>2</sup> (F)	3 (CP) <sup>4</sup>	CE 282 Hydraulics <sup>2</sup>	3 (CP) <sup>4</sup>
CSC 111 Introduction to Computing: Python	3	PY 208 Physics for Engineers & Scientists II	3
TDE 220 Civil Engineering Graphics	3	PY 209 Physics for Engineers & Scientists II Lab	1
MA 242 Calculus III	4	MA 341 Applied Differential Eq <b>OR</b> MA 305 Elem Linear Algebra	3
		MSE 200 Mech Prop of Struct Mat	3
		HES *** Phys. Ed/Healthy Living Course	1
<i>Total:</i>	16	<i>Total:</i>	17
JUNIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CE Core Course – Lab Intensive Elective I <sup>5</sup>	4	CE Core Course – Lab Intensive Elective II <sup>5</sup>	4
CE Core Course – Elective I <sup>5</sup>	3	CE Core Course – Elective II <sup>5</sup>	3
CE Junior Elective I <sup>5</sup>	3	CE Junior Elective II <sup>5</sup>	3
ST 370 Prob & Stat for Engineers	3	Basic Science Elective <sup>5</sup>	3
GEP Requirement <sup>3</sup>	3	Engineering Science Elective <sup>5</sup>	3
<i>Total:</i>	16	<i>Total:</i>	16
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
CE Senior Elective I <sup>5</sup>	3	CE Senior Elective III <sup>5</sup>	3
CE Senior Elective II <sup>5</sup>	3	CE Senior Elective IV <sup>5</sup>	3
Senior Elective <sup>5</sup>	3	CE Senior Design <sup>5</sup>	3
GEP Requirement <sup>3</sup>	3	GEP Requirement <sup>3</sup>	3
COM 110 Public Speaking <b>OR</b> ENG 331 Communication for Engr & Tech	3	GEP Requirement <sup>3</sup>	3
<i>Total:</i>	15	<i>Total:</i>	15
Minimum Credit Hours Required for Graduation: 126			

**Major/Program Footnotes:**

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

<sup>2</sup> Minimum grade of C-, E 115 requires satisfactory completion (S).

<sup>3</sup> GEP Requirements to be selected from the appropriate lists in consultation with advisor.

<sup>4</sup> CP = Critical Path major specific course predictive of student success.

<sup>5</sup> Select from appropriate lists on worksheet in consultation with advisor at least two of these choices must be '(D)esign' and these two courses must come from different areas

North Carolina State University  
**CIVIL ENGINEERING CURRICULUM**

Course Listing with Pre- and Corequisites

Department of Civil, Construction, and Environmental Engineering

For students entering NCSU Department **after** July 2024 (Fall 24)

Notes:					
<ul style="list-style-type: none"> <li>· Select design (D) courses following the requirements of the CE Worksheet on the front of this document.</li> <li>· Note the semester courses are offered in your course planning.</li> <li>· Students must meet all requisites for accreditations purposes.</li> </ul>					
			Hours	Semester	Pre- & Co- requisites
<b>Required Courses</b>					
	CE 214	Engineering Mechanics - Statics	3	F/S	C or better in PY 205 and MA 241, CoReq: MA 242
	CE 250	Intro. to Sustainable Infrastructure	3	F/S	CE or ENE majors only; CoReq: CSC 111, CE 214
	CE 225	Solid Mechanics	3	F/S	MA 242, C- or better in CE 214
	CE 282	Hydraulics	3	F/S	C- or better in CE 214; CoReq: MA 341, MA 305 or ST 370
	CE 263	Intro to Construction Engineering	3	F	CE or CON majors only; CoReq: CSC 111, CE 214
	CE 342	Engr Behav of Soils & Found	4	F/S	C- or better in CE 225 and CE 282
	CE 332	Civil Engineering Materials	3	F/S	MSE 200, C- or better in CE 225
<b>Coastal Engineering &amp; Water Resources</b>					
	CE 383	Hydrology & Urban Water Sys	3	F/S	C- or better in CE 282; CoReq: ST 370; CE, ENE, CON Majors
	CE 487	Intro. To Coastal & Ocean Engr	3	S	CE 282; Senior Standing
D	CE 488	Water Resources Engineering	3	F	CE 339 (must take in Sprg Jr. Yr.), CE 383
<b>Computing and Systems</b>					
	CE 437	Civil Engineering Computing	3	F	CSC 111 & (MA 341 or MA 305); Senior Standing
	CE 339	Civil Engineering Systems	3	S	CSC 111 & (MA 341 or MA 305); Junior Standing
<b>Construction Engineering</b>					
	CE 367	Mech. & Elec. Sys in Buildings	3	S	C- or better in CE282
D	CE 466	Building Construction Engr	3	F	CE 327 (take in Fall/Sprg Jr. Yr.)
<b>Environmental Engineering</b>					
	CE 373	Fund of Environmental Engr	3	F/S	CoReq: (CE250 or CE263) and (CHE 205 or CE 282)
	CE 479	Air Quality	3	S	CE 373 (take in Fall/Sprg Jr. Yr.) , CE 282 or CHE 311 or MEA 421; CoReq: ST 370 or ST 380
D	CE 476	Air Pollution Control	3	F	CE 373, MAE 201; CoReq: ST 370 or CHE 450
D	CE 477	Principles of Solid Waste Engr	3	S	CE 373 (take in Fall/Sprg Jr. Yr.), CE 250, CE 282
D	CE 484	Water Supply & Waste Water	3	F	CE 373 (take in Fall/Sprg Jr. Yr.), CE 282
	CE 478	Energy and Climate	3	F	Senior Standing
<b>Geotechnical Engineering</b>					
D	CE 435	Engineering Geology	3	Varies <sup>1</sup>	C- or better in CE 342
D	CE 443	Seepage, Embank, & Retain Str.	3	Varies <sup>1</sup>	C- or better in CE 342
D	CE 444	Intro to Foundation Engr	3	Varies <sup>1</sup>	C- or better in CE 342
<b>Structural Engineering</b>					
	CE 327	Reinforced Concrete Design	3	F/S	C- or better in CE 225
	CE 325	Structural Analysis	3	F/S	CSC 111, C- or better in CE 225
D	CE 426	Structural Steel Design	3	F/S	C- or better in CE 225
	CE 420	Structural Engineering Project	3	F/S	C-or better in CE 325, CE 327, CE 342, CE 426
<b>Transportation Engineering</b>					
	CE 305	Traffic Engineering	3	F/S	C- or better in CE 250 or CE 263; CoReq: ST 370
	CE 401	Transportation Systems Engr	3	F	C- or better in CE 305
D	CE 402	Traffic Operations	3	F	C- or better in CE 305
D	CE 403	Highway Design	3	S	C- or better in CE 305
	CE 405	Railroad Sys Planning, Des, & Oper.	3	alt S odd yrs	C- or better in CE305
D	CE 413	Principles of Pavement Design	3	F	CE 332, CE 342
<b>Other Civil Engineering Courses</b>					
	CE 301	Civil Engr Surveying & Geomatics	3	F/S	CE 225; CoReq: ST 370
	CE 450	Civil Engineering Project	3	F/S	CE 305, CE 342, CE 383; CoReq: one of CE402, CE403, CE413, CE435, CE443, CE444, or CE488,

<sup>1</sup> Courses are offered in a three semester rotation.