# **B.S.** in Civil Engineering

(120 credits minimum)

First Year		
1st Semester		Credits
CS 101	Computer Programming and Problem Solving	3
CHEM 125	General Chemistry I	3
FED 101	Fundamentals of Engineering Design	2
ENGL 101	English Composition: Introduction to Academic Writing	3
MATH 111	Calculus I	4
FYS SEM	First-Year Student Seminar	0
CHEM 125A	General Chemistry Lab I	1
	Term Credits	16
2nd Semester		
CHEM 126	General Chemistry II	3
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 112	Calculus II	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
CE 101	CE Computer Aided Design	1
	Term Credits	15
Second Year		
1st Semester		
CE 200	Surveying	2
CE 200A	Surveying Laboratory	1
MATH 211	Calculus III A	3
MATH 279	Statistics and Probability for Engineers	2
MECH 235	Statics	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
	Term Credits	15
2nd Semester		
CE 210	Construction Materials and Procedures	3
CE 260	Civil Engineering Methods	2
MATH 322	Differential Equations for Applications	3
MECH 239	Strength of Materials for Civil Engineers	3
ENE 262	Introduction to Environmental Engineering	3
	Term Credits	14
Third Year		
1st Semester		
CE 320	Fluid Mechanics	3
CE 320A	Hydraulics Laboratory	1
CE 321	Water Resources Engineering	3
CE 332	Structural Analysis	3
MECH 236	Dynamics	2
History and Humaniti requirements/ger-200	es GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-	3
	Term Credits	15
2nd Semester		13
CE 333	Reinforced Concrete Design	2
CE 341	Soil Mechanics	3
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CE 341A	Soil Mechanics Laboratory	1
CE 350	Transportation Engineering	3
CE 360	Sustainable Civil Engr Mat	3
History and Human requirements/ger-3	nities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education- 00-level/)	3
	Term Credits	15
Fourth Year		
1st Semester		
CE 431	Construction Materials Lab	1
CE 432	Steel Design	2
CE 443	Foundation Design	3
CE 494	Civil Engineering Design I	3
CE Elective <sup>1</sup>		3
300-level GER: Sel	lect one of the following:	3
COM 339	Practical Journalism	
COM 312	Oral Presentations	
COM 319	Technical, Professional and Scientific Writing for Publication	
COM 337	Photojournalism	
COM 316	Creative Writing	
	Term Credits	15
2nd Semester		
CE 495	Civil Engineering Design II	3
CE Designated Ele	ctive <sup>1</sup>	3
Science Elective <sup>2</sup>		3
IE 492	Engineering Management	3
Humanities and So	cial Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/	3
general-education-	requirements/hss-capstone/)	
	Term Credits	15
	Total Credits	120

# Co-op Option A Track

(145 credits minimum)

#### First Year

1st Semester		Credits
CS 101	Computer Programming and Problem Solving	3
CHEM 125A	General Chemistry Lab I	1
CHEM 125	General Chemistry I	3
FED 101	Fundamentals of Engineering Design	2
ENGL 101	English Composition: Introduction to Academic Writing	3
MATH 111	Calculus I	4
FYS SEM	First-Year Student Seminar	0
	Term Credits	16
2nd Semester		
CHEM 126	General Chemistry II	3
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 112	Calculus II	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
CE 101	CE Computer Aided Design	1
	Term Credits	15

#### Second Year 1st Semester CE 200 Surveying 2 **CE 200A** Surveying Laboratory 1 **MATH 211** Calculus III A 3 **MATH 279** Statistics and Probability for Engineers 2 **MECH 235 Statics** 3 **PHYS 121** Physics II 3 1 PHYS 121A Physics II Lab **Term Credits** 15 2nd Semester CE 210 Construction Materials and Procedures 3 2 CE 260 Civil Engineering Methods **MATH 322** Differential Equations for Applications 3 **ENE 262** Introduction to Environmental Engineering 3 **MECH 239** Strength of Materials for Civil Engineers 3 Professional Skills for Engineers I ENGR 211 1 **Term Credits** 15 Summer CO-OP I **Term Credits** 0 Third Year 1st Semester **ENGR 310** Co-op Work Experience I 12 Term Credits 12 2nd Semester CE 320 Fluid Mechanics 3 CE 320A Hydraulics Laboratory 1 CE 321 Water Resources Engineering 3 CE 332 Structural Analysis 3 MECH 236 **Dynamics** 2 History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-3 requirements/ger-200-level/) **Term Credits** 15 Summer CO-OP II **Term Credits** 0 Fourth Year 1st Semester **ENGR 410** Co-op Work Experience II 12 **Term Credits** 12 2nd Semester CE 333 Reinforced Concrete Design 2 CE 341 Soil Mechanics 3 1 **CE 341A** Soil Mechanics Laboratory CE 350 Transportation Engineering 3 CE 360 Sustainable Civil Engr Mat 3 History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-3 requirements/ger-300-level/) **Term Credits** 15

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### Fifth Year

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	Total Credits	145
	Term Credits	15
	n-requirements/hss-capstone/)	
Humanities and S	Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/	3
IE 492	Engineering Management	3
Science Elective	2	3
CE Designated E	lective <sup>1</sup>	3
CE 495	Civil Engineering Design II	3
2nd Semester		
	Term Credits	15
COM 316	Creative Writing	
COM 313	Technical Writing	
COM 319	Technical, Professional and Scientific Writing for Publication	
COM 312	Oral Presentations	
COM 339	Practical Journalism	
Select one of the	following:	3
CE Elective		3
CE 494	Civil Engineering Design I	3
CE 443	Foundation Design	3
CE 432	Steel Design	2
CE 431	Construction Materials Lab	1
1st Semester		

# Co-op Option B Track

(145 credits minimum)

## First Year

1st Semester		Credits
CE 101	CE Computer Aided Design	1
CS 101	Computer Programming and Problem Solving	3
CHEM 125	General Chemistry I	3
FED 101	Fundamentals of Engineering Design	2
ENGL 101	English Composition: Introduction to Academic Writing	3
MATH 111	Calculus I	4
FYS SEM	First-Year Student Seminar	0
	Term Credits	16
2nd Semester		
CHEM 126	General Chemistry II	3
CHEM 124		
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 112	Calculus II	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
	Term Credits	14
Second Year		
1st Semester		
CE 200	Surveying	2
CE 200A	Surveying Laboratory	1
MATH 211	Calculus III A	3
MATH 279	Statistics and Probability for Engineers	2
MECH 235	Statics	3

PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
11110 1217	Term Credits	15
2nd Semester	Term Oreums	13
CE 210	Construction Materials and Procedures	3
CE 260	Civil Engineering Methods	2
MATH 322	Differential Equations for Applications	3
ENE 262	Introduction to Environmental Engineering	3
MECH 239	Strength of Materials for Civil Engineers	3
IVILOTI 239	Term Credits	14
Third Year	Term Creats	14
1st Semester		
CE 320	Fluid Mechanics	3
CE 320A	Hydraulics Laboratory	1
CE 321		
CE 332	Water Resources Engineering	3
	Structural Analysis	3
MECH 236	Dynamics	2
requirements/ger-	anities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-	3
ENGR 211	Professional Skills for Engineers I	1
LIVOIX ZTT	Term Credits	16
2nd Semester	Term Credits	10
ENGR 310	Co-op Work Experience I	12
LINGK 310	Term Credits	12
Summer	Term Creats	12
CO-OP I		
CO-OF I	Term Credits	0
Fourth Year	Term Creats	U
1st Semester CE 333	Deinferend Congrete Deging	2
	Reinforced Concrete Design	2
CE 341	Soil Mechanics	3
CE 341A	Soil Mechanics Laboratory	1
CE 350	Transportation Engineering	3
CE 360	Sustainable Civil Engr Mat	3
requirements/ger-	anities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-	3
requirements/ger-	Term Credits	15
2nd Semester	Term Credits	13
ENGR 410	Co-op Work Experience II	12
LINGIX 410	Term Credits	12
Summer	Term Creats	12
CO-OP II		
CO-OF II	Taura Cua dita	
Fifth Year	Term Credits	0
1st Semester	Construction Materials Lab	4
CE 431		1
CE 432	Steel Design	2
CE 443	Foundation Design	3
CE 494	Civil Engineering Design I	3
CE Elective		3
Select one of the		3
COM 339	Practical Journalism	

COM 312	Oral Presentations	
COM 319	Technical, Professional and Scientific Writing for Publication	
COM 313	Technical Writing	
COM 316	Creative Writing	
	Term Credits	15
2nd Semester		
CE 495	Civil Engineering Design II	3
CE Designated Elective <sup>1</sup>		3
Science Elective <sup>2</sup>		3
IE 492	Engineering Management	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
	Term Credits	15
	Total Credits	144

Student must choose one of the following: CE 307, CE 351, CE 410, CE 414, CE 450, EnE 360, EnE 361

# **GER Electives**

Refer to the General Education Requirement section of this catalog for further information on GER electives.

This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits. First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.

Biology, Geology, Geomorphology only