

**BS/MS in CIVIL AND ENVIRONMENTAL ENGINEERING
CURRICULUM OUTLINE**

	FALL		SPRING		SUMMER 1		SUMMER 2				
Year 1	MATH1341 CHEM1151 CHEM1153 GE1110 GE1000 NU Core	Calculus 1 for Engrs. General Chem. for Engrs. Recitation for CHEM1151 Eng'g. Design Intro. to Eng'g. Arts OR Humanities Lvl. 1	4 4 0 4 1 4	MATH1342 PHYS1151 PHYS1152 PHYS1153 GE1111 ENGL1111	Calculus 2 for Engrs. Physics 1 for Engrs. Physics 1 Lab ILS for PHYS1151 Eng'g. Prob. Solv. & Comp. College Writing	4 4 1 0 4 4	Vacation Vacation				
Year 2 AA	MATH2321 PHYS1155 PHYS1156 PHYS1157 CIVE2221 CIVE2222 CIVE2334	Calculus 3 for Engrs. Physics 2 for Engrs. Physics 2 Lab ILS for PHYS1155 Statics & Strength Recitation for CIVE2221 Environ. Eng'g. 1	4 4 1 0 4 0 4	MATH2341 CIVE2000 CIVE2260 CIVE2261 CIVE2320 CIVE2321 ECON1115 or 1116 (NU Core)	Diff. Eq./Lin. Alg. Intro. to Eng'g. Co-op Materials Meas./Matls. Lab Struct. Analysis 1 Recitation for CIVE2320 Macro or Micro Economics (Social Science Lvl. 1)	4 1 3 2 4 0 4	Vacation Co-op				
Year 2 BB	MATH2321 CIVE2000 CIVE2221 CIVE2222 CIVE2260 CIVE2261 CIVE2334	Calculus 3 for Engrs. Intro. to Eng'g. Co-op Statics & Strength Recitation for CIVE2221 Materials Meas./Matls. Lab Environ. Eng'g. 1	4 1 4 0 3 2 4	Co-op		Co-op		Vacation			
Year 3 AA	Co-op		CIVE2331 CIVE2340 CIVE2341 Elective Elective	Fluid Mechanics Soil Mechanics Soil Mechanics Lab UG Civil Tech. Elective Science Elective	4 4 1 4 4	CIVE2324 Elective	Concrete Design General Elective 1	4 4	Co-op		
Year 3 BB	PHYS1155 PHYS1156 PHYS1157 CIVE2320 CIVE2321 CIVE2331 ECON1115 or 1116 (NU Core)	Physics 2 for Engrs. Physics 2 Lab ILS for PHYS1155 Struct. Analysis 1 Recitation for CIVE2320 Fluid Mechanics Macro or Micro Economics (Social Science Lvl. 1)	4 1 0 4 0 4 4	Co-op		Co-op		MATH2341 CIVE2340 CIVE2341	Diff. Eq./Lin. Alg. Soil Mechanics Soil Mechanics Lab	4 4 1	
Year 4 YB	Co-op		CIVE3000 CIVE3464 Elective Elective Elective	Prof. Issues in Eng'g. Prob./Eng'g. Econ. Grad. Civil Tech. Elective 1 Grad. Civil Tech. Elective 2 Grad. Course 3	1 4 4 4 4	*ENGL3302 Elective	Adv. Writing for Prof. General Elective 2	4 4	Vacation		
Year 4 ZC	CIVE2324 CIVE3000 Elective Elective *ENGL3302	Concrete Design Prof. Issues in Eng'g. UG Civil Tech. Elective Grad. Civil Tech. Elective 1 Adv. Writing for Prof.	4 1 4 4 4	Elective Elective Elective Elective	Grad. Civil Tech. Elective 2 Grad. Course 3 Grad. Course 4 Science Elective	4 4 4 4	Vacation		Elective Elective	General Elective 1 General Elective 2	4 4
Year 5 YB	Elective Elective Elective Elective	Grad. Course 4 Grad. Course 5 Grad. Course 6 General Elective 3	4 4 4 4	CIVE476x Elective Elective Elective	Sr. Design Project Grad. Course 7 Grad. Course 8 General Elective 4	5 4 4 4					
Year 5 ZC	CIVE3464 Elective Elective Elective	Prob./Eng'g. Econ. Grad. Course 5 Grad. Course 6 General Elective 3	4 4 4 4	CIVE476x Elective Elective Elective	Sr. Design Project Grad. Course 7 Grad. Course 8 General Elective 4	5 4 4 4					

*ENGL3301 is an acceptable substitution for engineering majors.

Revised 6/24/11

There are five (5) disciplines within the Civil Engineering BS/MS program that will following this curriculum scheme. Notes generic to all disciplines:

NU Core Elective Requirements: 2 required - (One Arts Lvl. 1 **OR** Humanities Lvl. 1) **AND** (One Social Science Lvl. 1 (Social Science Lvl. 1 fulfilled by either ECON1115 or ECON1116))

General Elective Requirements: 4 required - Any 4 SH course that is not remedial or repetitive

Science Elective: 1 required - See approved Science elective list on Civil Department website. Each discipline has one (1), and may be specified by discipline

UG Civil Engineering Technical Elective: 1 required -Each discipline has one (1) undergraduate technical elective, specified by discipline, that may not duplicate a Graduate Technical Elective.

Graduate Technical Electives: Each discipline has two (2), specified by discipline. They are graduate classes that fulfill the undergraduate technical elective requirement.

Graduate Courses: Each discipline has six (6), specified in the M.S. program for that discipline. These are in addition to the two Graduate Technical Electives, and may include substitutions on the next page.

Capstones (Senior Design Project).

[CIVE4765 - Environmental capstone](#)

[CIVE4767 - Structural capstone](#)

[CIVE4768 - Transportation capstone](#)

Electives may be interchanged. Please consult with your advisor: Tricia Lenihan - 220 Snell, 617-373-2154, t.lenihan@neu.edu

Program Notes:

Coursework must be completed with a minimum GPA of 3.4 to join the program.

Students will be required to meet with an undergraduate advisor and a graduate advisor to petition to enter the program.

Students are encouraged to meet with their financial aid counselor and a customer service representative to review any financial questions.

Notes for specific disciplines and summary on next page

Civil and Environmental Engineering Department
Discipline Specific Notes

Construction Management

UG Civil Engineering Technical Elective (TE): Must include one of the Department Project Electives (CIVE 4536, CIVE 4542, CIVE 4554).

Graduate Technical Electives: Must include CIVE 7220 (Construction Mgt.), CIVE 7221 (Construction Project Control, 2 SH), and CIVE 7231 (Design/Build Proj. Delivery, 2 SH).

Other substitutions:

ACCT 6200 (Financial Rptg. & Man. Decision Making 1), normally required in the graduate program, is replaced with EMGT 6305 (Financial Mgt).

CIVE 3464 is replaced with Graduate Technical Elective No. 2, which may not be CIVE 4575 (Construction Mgt) because its content is covered in required graduate courses.

Environmental Engineering

UG Civil Engineering Technical Elective (TE): May not include CIVE 4534 (Environmental Engineering 2) since its content is covered in required graduate courses.

Graduate Technical Electives: Must include CIVE 4536 (Hydrologic Engineering), which counts as CIVE 7260 (Hydrology), CIVE 7251 (Environ. Biol. Processes) and CIVE 7252 (Water/Wastewater).

Geotechnical Engineering

UG Civil Engineering Technical Elective (TE): CIVE 4536 (Hydrologic Engineering) or CIVE 4554 (Highway Engineering).

Note: CIVE 4542 (Foundation Engineering) should not be taken since content is covered in CIVE 7302.

Graduate Technical Electives: Must include CIVE 5321 (Geoenvironmental Engineering) and CIVE 7312 (Earthquake Engineering).

Structural Engineering

UG Civil Engineering Technical Elective (TE): CIVE 4542 (Foundation Engineering).

Graduate Technical Electives: Must include 2 from the following: CIVE 7350 (Concrete Behavior), CIVE 7351 (Steel Behavior), CIVE 7341 (Seismic Analysis & Design), CIVE 7352 (Bridge Design)/CIVE 7353 (Prestressed Concrete).

Other Substitutions/Requirements:

CIVE 3522 (Structural Analysis 2) is required and counts as a graduate course. CIVE 3425 (Steel Design) is required in place of General Elective No. 4.

Transportation Engineering

UG Civil Engineering Technical Elective (TE): May not include CIVE 4554 (take CIVE 5373 instead) or CIVE 4556 (take CIVE 7376 instead).

Graduate Technical Electives: Must include CIVE 7376 (Traffic Eng.'g) and CIVE 4554 (Highway Engineering), which counts as a graduate course.

Other Substitutions/Requirements:

IE 7280 (Statistical Methods) is required.

Civil and Environmental Engineering Department
Summary of Curriculum Substitutions/Graduate Course Totals

Discipline	Graduate Technical Electives	Undergraduate Tech. Elective counts for graduate credit	Graduate classes that count toward undergraduate requirements besides General Elective	Remaining Graduate Electives	Total graduate courses (based on 4 SH = 1 course)
Construction Mgt.	2		IE 6200 and EMGT 6305 replace CIVE 3464	4	8
Environmental Eng.'g	2	CIVE 4536 Hydrologic Eng'g		5	8
Geotechnical Eng.'g	2			6	8
Structural Eng.'g	2	CIVE 3522 Structural Analysis 2		5	8
Transportation Eng.'g	2	CIVE 4554 Highway Eng.'g		5	8