THE CITY COLLEGE – SCHOOL OF ENGINEERING

November 2, 2023

Civil Engineering Curriculum

Fall 2023 – Spring 2024

Math 20100 Calculus I Pre: Math 19500 (C min.) 4 cr.	**Chem 10301** General Chemistry I Pre: Math 19500 (C min.) 4 cr.	**CSc 10200** Introduction to Computing Pre: Math 19500 (C min.) or Pre/Co: Math 20100 (C min.) 3 cr.	**or**	**ENGR 10200** A Data Sci & Stat Approach to Programming Pre: Math 19500 (C min.) Pre/Co: Math 20100 (C min.)	**Engl 11000**[6] Freshman Composition 3 cr.	**Liberal Arts**[4] 3 cr.
Math 21200 Calculus II Pre: Math 20100 (C min.) 4 cr.	**Chem 10401** General Chemistry II Pre: Chem 10301 (C min.) 4 cr.	**Phys 20700** University Physics I Pre/Co: Math 21200 4 cr.	**Engl 21007** Writing for Engineering Pre: Eng 11000 or FIQWS 3 cr.		**CE 20900** Structural and Site Plans Pre/Co: CSc 10200 or ENGR 10200 3 cr.	
Math 21300 Calculus III Pre: Math 21200 (C min.) 4 cr.	**CE 23100** Statics Pre: Phys 20700 (C min.), Math 21200 (C min.) & CSc 10200 or ENGR 10200 Pre/Co: CE 10000, Math 21300 (C min.) 3 cr.	**Phys 20800** University Physics II Pre: Phys 20700 Pre/Co: Math 21300 4 cr.	**CE 21400** CE Data Analysis Pre: CSc 10200 or ENGR 10200, Phys 20700 (C min.) Pre/Co: CE 10000 , Engl 21007, Math 21300 (C min.) 3 cr.		**CE 10000**[8] Fundamentals of CE Problem Solving Pre: CSc 10200 or ENGR 10200; Phys 20700 (C min.); Math 21200 (C min.) 1 cr.	**CE 10100** (Fall only) Intro to Civil Engineering Pre: Phys 20700 (C min.); Co: Engl 21007 1 cr.
Math 39100 Differential Equations Pre: Math 21300 3 cr.	**Math 34600** Linear Algebra Pre: Math 21300 (C min.) 3 cr.	**CE 35000** Fluid Mechanics Pre: CE 23100 (C min.), CSc 10200 or ENGR 10200, CE 10000 Pre/Co: CE 10100, Math 39100 (C min.) 3 cr.		**CE 33200** Mechanics Deformable Bodies Pre: CE 10000, CE 23100 (C min.), CE 21400 (C min) Pre/Co: CE 10100, Math 39100 (C min.) 4 cr.	**CE 31500** Computational Methods in CE Pre: CE 10000, CE 21400 (C min.), CE 23100 (C min.), CSc 10200 or ENGR 10200 Pre/Co: CE 10100, Math 34600, Math 39100 (C min.) 3 cr.	
CE 34000 Structural Analysis Pre: CE 33200, CE 20900 (C min.) 3 cr.	**CE 36500** Hydraulic Engr. Pre: CE 35000 (C min.). 3 cr.	**CE 32600** (Fall Only) Transportation Planning Pre: CE 21400 (C min.) Pre/Co: CE 31500 3 cr.	**CE 37200** Environmental Impact Assessment Pre: Chem 10401 (C min.), CE 21400 (C min.), & CE 35000 (C min.) 3 cr.		**CE 34500** Soil Mechanics Pre: CE 35000 (C min.), CE 21400 (C min) & CE 33200 3 cr.	**Liberal Arts**[4] 3 cr.
CE 44100 Reinforced Concrete Pre: CE 21400 (C min) & CE 34000 3 cr.	**CE 32700** (Spring only) Transportation Systems Engr. Pre: CE 20900 (C min.), CE 21400 (C min), CE 33200 3 cr.	**CE 37400** Environment Engineering Pre: CE major: Chem 10401, CE 21400, CE 35000; ESE major: Chem 10401; ENGR 26400; CE 35000 or ME 35600 or ChE 34100 3 cr.	**Science Elective** **EAS 32800** Global Environ. Haz or **EAS 48800** Climate & Climate Change Pre: CE 37200, Math 20200 or Math 21200, Phys 20800 3 cr.	Or **Bio 10100** Bio Foundations Pre: Math 19500 (C min.) 4 cr.		**Liberal Arts**[4] 3 cr.
Specialization Core *(Select one of four areas)* 3 cr.	**Specialization Elective** *(In same area)* 3 cr.	**CE 43500** (Fall only) Dynamics of CE Systems Pre: CE 33200, CE 31500, Math 34600 3 cr.	**CE 31600** (Fall only) CE Decision & Systems Analysis Pre: CE 21400 (C min.), CE 31500 & Math 34600 Pre/Co: CE 32700, CE 36500 & CE 44100 3 cr.		**Liberal Arts**[4] 3 cr.	**Liberal Arts**[4] (20000 or higher) 3 cr.
Specialization Core *(In same area)* 3 cr.	**Specialization Elective** *(In same area)* 3 cr.	**CE 40100**[7] *((Spring Only)* Review of Civil Eng'ng Fundamentals (Pass/Fail) Pre: Upper junior or senior standing 1 cr.	**CE 50900** Senior Design Project Pre: senior standing Pre/Co: CE 32600, CE 32700, CE 37200, CE 37400 & CE 44100 3 cr.		**CE 40500** (Spring only) Civil Engineering Management Pre: CE 31600, CE 34000 3 cr.	**Liberal Arts**[4] (20000 or higher) 3 cr.

Specialization Core Courses

Environmental Engineering and Water Resources
CE 566 Eng. Hydrology (Pre: CE 214 (C min), CE 365) (S)
CE 583 Air Poll. and Control (Pre: Math 391; co: CE 474)
or CE 584 Solid Waste Mgmt. (Co: CE 474) (F)

Structures
CE 440 FEA (Pre: CE 315, CE 340, Math 346) (S)
CE 442 Structural Design (Pre: CE 214 (C min), CE 340) (F)

Transportation
CE 520 Traffic Engineering (Pre: CE 327; Co: CE 326, CE 316) (F)
CE 540 Highway Eng. (Pre: CE 327; Co: CE 326) (S)

Multidisciplinary
CE 440 FEA (Pre: CE 315, CE 340; Math 346) (S)
CE 442 Structural Design (Pre: CE 214 (C min), CE 340) (F)
CE 520 Traffic Eng. (Pre: CE 327; Co: CE 326, CE 316) (F)
CE 540 Highway Eng. (Pre: CE 327; Co: CE 326) (S)
CE 566 Eng. Hydrology (Pre: CE 214 (C min), CE 365) (S)
CE 583 Air Poll. and Control (Pre: Math 391; co: CE 474)
or CE 584 Solid Waste Mgmt. (Co: CE 474) (F)

Specialization Elective Courses (code: F=fall, FE= fall even, FO = fall odd, S= spring, SE= spring even, SO = spring odd)

Environmental Engineering and Water Resources
CE 482 Water and Wastewater Treatment (Pre: CE 474) (FO)
CE 51003 Independent Study (consent)
CE 571 Water Quality Analysis (Pre: CE 374) (SO)
CE 573 Sustainable Infrastructure (Pre: CE 372)
CE 583 Air Pollution & Control (Pre: Math 391; Co: CE 474) (FO)
CE 584 Solid Waste Management (Co: CE 374) (FE)
Chem 26100 Organic Chemistry (Pre: Chem 104)
ENGR 59803 Industrial Ecology and Life Cycle Assessment
ENGR 59910 Intro to GIS (Pre: CE 214 (C min)) (F)
ENGR 30100 Intro. to Sensing (Pre: Phy 208, ENGR 103) (S)
ENGR 31230 Energy and Environment (Pre: Phys 208 (C min), Math 203 (C min), Chem 103 (C min))

Structures
CE 51003 Independent Study (consent)
CE 530 Adv. Strength (Pre: CE 332, CE 315, Math 346) (F)
CE 540 Highway Engineering (Pre: CE 327; Co: CE 326) (S)
CE 550 Adv. Reinforced Concrete (Pre: CE 315, CE 441) (F)
CE 555 Concrete Sustainability (Pre: CE 441) (SE)
CE 556 Design of Wood Struc. (Pre: CE 214 (C min), CE 340) (SO)
CE 590 Foundation Engineering (Pre: CE 315, CE 345) (S)
ME 461 Eng. Materials (Pre: Chem 103, Engl 210, CE 332)

Transportation
CE 51003 Independent Study (consent)
CE 526 Rail System Design (Pre: CE 327) (FE)
CE 541 Highway & Airport Design (Pre: CE 327; Pre/Co: CE 326) (FO)
CE 545 Urban Transportation Systems (Pre: CE 326) (SE)
CE 547 Urban Freight & City Logistics (Pre: CE 326) (SO)
CE 548 Transit Systems (Pre: CE 326) (FE)
CE 566 Engineering Hydrology (Pre: CE 214 (C min), CE 365) (S)
CE 590 Foundation Engineering (Pre: CE 315, CE 345) (S)
ENGR 59910 Intro to GIS (Pre: CE 214 (C min)) (F)

Multidisciplinary
CE 566 Engineering Hydrology (Pre: CE 214 (C min), CE 365) (S)
CE 583 Air Pollution and Control (Pre: Math 391; Co: CE 474)
CE 584 Solid Waste Management (Co: CE 474) (F)
CE 440 FEA (Pre: CE 315, CE 340; Math 346) (S)
CE 442 Structural Design (Pre: CE 214 (C min), CE 340) (F)
CE 520 Traffic Eng. (Pre: CE 327; Co: CE 326, CE 316) (F)
CE 540 Highway Eng. (Pre: CE 327; Co: CE 326) (S)

One CE or ENGR course from the specialization electives lists for environmental, structures or transportation specializations

1. **The latest version of the curriculum sheet supersedes any curriculum and pre/co-requisite information in the Undergraduate Bulletin or online.**
2. **"C" Passing Grade Requirement:** Courses in shaded area (▢) require a minimum passing grade of "**C**".
3. **Skills tests:** Certain students may be required to pass CUNY Assessment Tests in one or more subjects within 1 or 2 years of admission.
4. **Liberal Arts electives:** CE students must take six approved courses (18 credits) of which at least two (6 credits) must be at the 20000 level or higher. **Four** of the courses should satisfy Flexible Core (Pathways) liberal arts requirements in the Creative Expression (CE), World Cultures & Global Issues (WCGI), Individual & Society (IS), and U.S. Experience (US) areas. Prior courses in these four areas from other colleges can satisfy the electives. The remaining **two** courses must be chosen from the list on the Grove School of Engineering web site at ccny.cuny.edu/engineering/gen-ed . See ccny.cuny.edu/engineering/pathways for details and the Pathways course lists. A prior degree may fulfill the requirement of all six courses.
5. **Other Graduation Requirements:** Apply for graduation during registration for the last semester. Minimum GPA of 2.00. Minimum QPA of zero. Residency Requirement: 33 credits of 30000-level or higher Civil Engineering courses taken at CCNY.
6. **Program Changes:** Substitution of other courses for required courses must be approved by the Chair of the Civil Engineering Department (ST-136), and the Associate Dean of the Office of Undergraduate Affairs (ST-209).
7. Students can satisfy this requirement by passing the Fundamentals of Engineering licensing examination.
8. CE 10000 (Fundamentals of Engineering Problem Solving) replaces the Engineering Science requirement.

Total Credits: 134 – 135.