

Mechanical Engineering Curriculum

Fall 2023 – Spring 2024

Math 20100 ² Calculus I Pre: Math 19500 (C min.) 4 cr.	General Chemistry ² Chem 10301 Pre: Math 19500 (C min.) 4 cr.	ME 14500 Computer-Aided Drafting 2 cr.	Engl 11000 ⁶ Freshman Composition 3 cr.	Engr 10100 ⁶ Engineering Design Pre/Co: Math 19500 (C min.) 1 cr.	Liberal Arts ⁴ 3 cr.
Math 21200 ² Calculus II Pre: Math 20100 (C min.) 4 cr.	Phys 20700 ² General Physics I Pre/Co: Math 20200 or Math 21200 4 cr.	Science Elective ² See the list below 3–4 cr.		Engr 21007 Writing for Engineering Pre: Engl 11000 or FIQWS 10026 3 cr.	Liberal Arts ⁴ 3 cr.
Math 20300 ² Calculus III Pre: Math 20200 (C min.) Or Math 21300 Calculus III Pre: Math 21200 (C min.) 4 cr.	Phys 20800 ² General Physics II Pre: Phys 20700 Pre/Co: Math 20300 or Math 21300 4 cr.	ME 24600 ² Engineering Mechanics I Pre: Phys 20700 (C min.) & Math 20200 (C min.) or Math 21200 (C min.) Pre/Co: ME 14500 or BME 22000 3 cr.		Engr 20400 Electrical Circuits Pre/Co: Phys 20800 (C min.) Pre/Co: Math 20300 (C min.) or Math 21300 (C min.) 3 cr.	Liberal Arts ⁴ 3 cr.
Math 39100 ² Differential Equations Pre: Math 20300 (C min) or Math 21300 (C min) 3 cr.	ME 24700 Engineering Mechanics II Pre: ME 24600 (C min.) Pre/Co: Math 39100 (C min.) 3 cr.	ME 33000 Mechanics of Materials Pre: Math 20300 (C min.) or Math 21300 (C min.), ME 24600 (C min.) 3 cr.	ME 32200 Computer Meth. in Engr. Pre/Co: Math 39100 (C min.) 3 cr.	Engr 23000 Thermodynamics Pre: Chem 10301 (C min.), Pre/Co: Phys 20800 (C min.) & Math 20300 (C min.) or Math 21300 (C min.) 3 cr.	
Math 39200 Linear Algebra/Vector Analysis Pre: Math 20300 (C min.) Or Math 34600 Elements of Linear Algebra Pre: Math 21200 or Math 20300 3 cr.	ME 31100 Fundamentals of Mechatronics Pre: Math 39100 (C min.), Engr 20400, ME 24700, & ME 33000 Pre/Co: Math 39200 or Math 34600, ME 32200, & Engl 21007 3 cr.	ME 35600 Fluid Mechanics Pre: Math 39100 (C min.), Phys 20800 (C min.) Pre/Co: ENGR 23000, Math 39200 or Math 34600 (C min.) 3 cr.	ME 46100 Engineering Materials Pre: Chem 10301 (C min.) & Engl 21007 Pre/Co: ME 33000 4 cr.	Liberal Arts ⁴ 3 cr.	
ME 43000 Thermal Sys. Analysis & Design Pre: Engr 23000 & ME 35600 3 cr.	ME 37100 Computer-Aided Design Pre: ME 31100, ME 33000 & ME 32200 Pre/Co: Math 39200 or Math 34600 (C min.) 3 cr.	ME 41100 System Dynamics & Control Pre: ME 31100, ME 33000 Pre/Co: ME 35600 4 cr.	ME 43300 Heat Transfer Pre/Co: ME 35600 Pre: ENGR 23000 3 cr.	ME 47200 Mech. Systems Design Pre: ME 24700 & ME 33000 Pre/Co: ME 46100 3 cr.	
Technical Elective See the list below 3 cr.	ME 43600 Aero-Thermal-Fluids Lab Pre: ME 31100, ME 43000 & ME 43300 1 cr.	ME 46200 Manufacturing Processes Pre: ME 14500 & ME 46100 3 cr.	Technical Elective See the list below 3 cr.	ME 47300 Senior Design Project I Pre: ME 47200, ME 37100 Pre/Co: ME 46200 & ME 43600 & ME 41100 3 cr.	
Technical Elective See the list below 3 cr.	Technical Elective See the list below 3 cr.	Technical Elective See the list below 3 cr.	ME 47400 Senior Design Project II Pre: ME 47300 & ME 41100 3 cr.		Liberal Arts ⁴ (20000 or higher) 3 cr.

Technical Electives (five courses)	
Bio 32100 ² : Human Phys. Chem 26100 ² : Org. Chem I Chem 33000 ² : Phys Chem I CSc 10200 ^{8,9} : Intro to Comput ⁸ CSc 10300 ^{8,9} : Intro to Comput For Majors ⁸ EAS 21700 ² : Earth Atm Sci Engr 55400: Reactor Phys and Engr	ME 40100: Review of Engr. Fund. (1 cr.) ME 40200: Project Management (1 cr.) ME 44100 Adv. Stress Anal. ME 46600 Dyn Aerospace Vehicles ME 46700: Spec. Topics Aerospace Engr. ME 46800 Aircraft & Rocket Prop ME 46900 Spacecraft Sys. & Design ME 47000: Spec. Proj. Aerospace Engr. ME 47100 Energy Sys. Design ME 51100 Adv. Mechatronics ME 51400 Rotorcraft Aerodyn. ME 51500 Orbital Mech ME 52600: Finite Element Method ME 53600: Sustainable Energy Conv. Sys
Phys 31500 ² : Medic. Phys. Phys 32100 ² : Mod. Phys. For Eng Phys 42200 ² : Biophysics Phys 42300 ² : Biophysics in Applications Phys 45400 ² : Descript. Astron. Engr 55500 Thermal Hydraulics Engr 55600 Nuclear Reactor Design, Opt & Safety	ME 53700 Turbo-machines ME 53800 Auto Safety Desgn & Injury Biomech ME 53900 Vehicular Power Systems ME 54200 Intro. Theory & Prac. Vib. ME 54600 Robotics & Automat ME 54700 Environ Control ME 54800 Aerostructures ME 55500 Struct. Dyn. & Aeroelasticity ME 55600 Adv. Fluid Mech ME 56300: Micro/Nano Tech. ME 57100 Mechanism Design ME 57200 Aerodyn Design ME 5900X-5910X ⁹ : Special Proj. (1–3 cr.) ME 59500: Teaching /Research Exp. ME 5980X-5990X ⁹ : Topics in ME (3–6 cr.)

Science Electives² (one course)
Bio 10100: Foundation of Bio. Bio 32100: Human Phys. Chem 10401: Gen. Chem. II Chem 26100: Org. Chem II Chem 33000: Phys Chem I EAS 10600: Earth Systems Science EAS 21700: Earth Atm Sci Phys 31500: Medic. Phys. Phys 32100: Mod. Phys. Phys 42200: Biophysics Phys 42300: Biophysics in Applications Phys 45400: Descript. Astron.

- The latest version of the curriculum sheet supersedes any curriculum and pre-/co-requisite information in the Undergraduate Bulletin or online
- “C” Passing Grade Requirement: Courses in shaded area (■) require a minimum passing grade of “C”.
- Skills tests: Certain students may be required to pass CUNY Assessment Tests in one or more subjects within 1 or 2 years of admission.
- Liberal Arts electives:** ME students must take **six** approved courses, of which at least two must have course numbers of 20000 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 cnv.cuny.edu/engineering/gen-ed.

See cnv.cuny.edu/engineering/pathways for details and the Pathways course lists. A prior degree may remove the requirement of all six courses.
- Other Graduation Requirements: Apply for graduation during registration for the last semester. Minimum GPA of 2.00. Minimum QPA of zero. Residency Requirement: 36 credits of 30000-level or higher Mechanical Engineering courses taken at CCNY.
- Transfer students with credit for Math 20200 are considered too advanced for Engr 10100. They should take a 1-credit ME Elective course instead. FIQWS 10026 fulfills the requirements for Engl 11000 and Engr 10100.
- Program Changes: Substitution of other courses for required courses must be approved by the Chair of the Mechanical Engineering Department (ST-233), and the Associate Dean of the Office of Undergraduate Affairs (ST-209) for final approval.
- Students are permitted to select Csc 10200 or CSc 10300 as a Technical Elective, but not both.
- Departmental approval required.