**THE CITY COLLEGE – SCHOOL OF ENGINEERING January 20, 2021**

**Mechanical Engineering Curriculum**

**Fall 2020 – Spring 2021**

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| **Math 20100 (C min)**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 (C min)** 2  Calculus II  Pre: Math 20100 (C min.) | | **Phys 20700** 2  General Physics I Pre/Co: Math 20200 | | | **Science Elective** 2  See the list below | | | | | | | | **Engl 21007**  Writing for Engineering Pre: Engl 11000 or FIQWS | | **Liberal Arts *4*** |
| 4 cr. | | 4 cr. | | | 3–4 cr. | | | | | | | | 3 cr. | | 3 cr. |
| **Math 21300** 2 **(C min)**  Calculus III  Pre: Math 202 or Math 212 (C min.)  4 cr. | | **Phys 20800** 2 General Physics II Pre: Phys 20700  Pre/Co: Math 20300  4 cr. | | | **ME 24600** 2  Engineering Mechanics I  Pre: Phys 20700 (C min.) & Math 20200 (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.)  3 cr. | | **Liberal Arts *4***  3 cr. |
| **Math 39100 (C min)** 2  Differential Equations  Pre: Math 20300 or Math 213 | | **ME 24700**  Engineering Mechanics II Pre: ME 24600 (C min.)  Pre/Co: Math 39100 (C min.) | | | | | **ME 33000**  Mechanics of Materials Pre: Math 20300 (C min.),  ME 24600 (C min.) | | | | | | **ME 32200**  Computer Meth. in Engr. Pre/Co: Math 39100 (C min.) | | **Engr 23000**  Thermodynamics  Pre: Chem 10301 (C min.), Pre/Co: Phys 20800 (C min.)  & Math 20300 (C min.)  3 cro.r Math 21300 (C min) |
| 3 cr. | | 3 cr. | | | | | 3 cr. | | | | | | 3 cr. | |
| **Math 346 (C min)**  Linear algebra  Pre: Math 20300 or Math 21300  3 cr. | | **ME 31100**  Fundamentals of Mechatronics  Pre: Math 39100 (C min.), Engr 20400, ME 24700,  & ME 33000  Pre/Co: Math 39200, 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  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 14500, ME 33000 & ME 32200  Pre/Co: Math 39200  3 cr. | | | | **ME 41100**  System Dynamics & Control Pre: ME 31100, ME 37100  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 43300, ME 46200 & ME 43600 &  ME 41100  3 cr. | | | **Liberal Arts *4***  (20000 or higher)  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. |

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| **Technical Electives** *(five courses)*  Bio 321002: Human Phys. Chem 261002: Org. Chem I Chem 330002: Phys Chem I CSc 102008, 9: Intro to Comput8  CSc 103008, 9: Intro to Comput For Majors8  EAS 217002: Earth Atm Sci  Engr 55400: Reactor Phys and Engr  Phys 315002: Medic. Phys.  Phys 321002: Mod. Phys. For Eng Phys 422002: Biophysics  Phys 423002: Biophysics in Applications Phys 454002: Descript. Astron.  Engr 55500 Thermal Hydraulics  Engr 55600 Nuclear Reactor Design, Opt & Safety  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  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 Mech Design  ME 57200 Aerodyn Design  ME 5900X-5910X9: Special Proj. (1–3 cr.) ME 59500: Teaching /Research Exp.  ME 5980X-5990X9: Topics in ME (3–-6 cr.)  ME 59901: Prod. Dev. Mgmt & Mkt | **Science Electives** 2 *(one course)*  Bio 10100: Foundation of Bio. Bio 32100: Human Phys.  Chem 10401: Gen. Chem. II Chem 26100: Org. Chem I 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. |

1. The latest version of the curriculum sheet supersedes any curriculum and pre-/co-requisite information in the Undergraduate Bulleting 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:** 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 ccny.cuny.edu/engineering/gen-ed .

See ccny.cuny.edu/engineering/pathways for details and the Pathways course lists. A prior degree may remove the requirement of all six courses.

1. 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.
2. 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.
3. 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.
4. Students are permitted to select Csc 10200 or CSc 10300 as a Technical Elective, but not both.
5. Departmental approval required.

**Total Credits: 129 – 130**