**THE CITY COLLEGE – SCHOOL OF ENGINEERING**

**Mechanical Engineering Curriculum**

**Fall 2017 – Spring 2018**

**March 14, 2018**

**Math 20100** 2 **General Chemistry** 2 **ME 14500** **Engl 11000 *6*** **Engr 10100 *6*** **Liberal Arts *4***

Calculus I

Pre: Math 19500 (C min.)

3 cr.

**Math 20200** 2

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| **Chem 10301** |  | Computer-Aided Drafting | Freshman Composition |  | Engineering Design |  |  |
| Pre: Math 19500 (C min.) |  |  |  |  | Pre/Co: Math 19500 (C min.) |  |  |
| 4 cr. |  | 2 cr. | 3 cr. |  | 1 cr. |  | 3 cr. |
| **Phys 20700** 2 |  | **Science Elective** 2 |  |  | **Engl 21007** |  | **Liberal Arts *4*** |

Calculus II General Physics I See the list below Writing for Engineering

Pre: Math 20100 (C min.) Pre/Co: Math 20200 Pre: Engl 11000 or FIQWS

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

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| See the list below | See the list below | See the list below |
| 3 cr. | 3 cr. | 3 cr. |
|  |  |
| **Design Electives** *(three courses)* | **ME Elective** *(6 credits)* |
| Engr 55500 Thermal Hydraulics | ME 53800 Automotive Safety Design and | BME 50100: Cell & Tissue Mech. |
| Engr 55600 Nuclear Reactor Design, | Injury Biomechanics | BME 50200: Cell & Tissue Trans. |
| Operation and Safety | ME 53900 Vehicular Power Systems | BME 50300: Cell & Tissue Biomat |
| ME 44100 Adv. Stress Anal. | ME 54200 Intro. Theory & Prac. Vib. | CSc 10200: Introduction to Computing8 |
| ME 46600 Dyn Aerospace Vehicles | ME 54600 Robotics & Automat | CSc 10300: Introduction to Computing For Majors8 |
| ME 46800 Aircraft & Rocket Prop | ME 54700 Environ Control | Engr 55400: Reactor Physics and Engineering |
| ME 46900 Spacecraft Sys. & Design | ME 54800 Aerostructures | ME 40100: Review of Engr. Fund. (note: 1 cr.) |
| ME 47100 Energy Sys. Design | ME 55500 Struct. Dyn. & Aeroelasticity | ME 40200: Project Management (note: 1 cr.) |
| ME 51100 Adv. Mechatronics | ME 55600 Adv. Fluid Mech | ME 56300: Micro/Nano Tech. |
| ME 51400 Rotorcraft Aerodyn. | ME 57100 Mech Design | ME 46700: Spec. Topics Aerospace Engr. |
| ME 51500 Orbital Mech | ME 57200 Aerodyn Design | ME 47000: Spec. Proj. Aerospace Engr. |
| ME 53700 Turbomach |  | ME 52600: Finite Element Method |
|  |  | ME 53600: Sustainable Energy Conv. Systems |
|  |  | ME 5900X-5910X: Special Proj. (note: 1–3 cr.) |

ME 59500: Teaching /Research Exp.

ME 5980X-5990X: Topics in ME (note: 3–-6 cr.)

ME 59901: Prod. Dev. Mgmt & Mkt.

Phys 32100: Mod. Physics for Eng.

*Or any course from Design Electives*

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| Senior Design Project II |  | (20000 or higher) |
| Pre: ME 47300 & ME 41100 |  |  |
| 3 cr. |  | 3 cr. |

**Science Elective** 2*(two courses)*

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-/corequisite information in the Undergraduate Bulletin or online.
2. “C” Passing Grade Requirement: Courses in shaded area () require a minimum passing grade of “C”.

1. Skills tests: Certain students may be required to pass CUNY Assessment Tests in one or more subjects within 1 or 2 years of admission.
2. Liberal Arts electives: ME students must take six approved courses (18 credits) of which at least two (6 credits) must be at the 20000 level or higher. A list of approved courses is posted on the School of Engineering web site at ccny.cuny.edu/engineering/gen-ed and can be viewed at the Office of Undergraduate Affairs (ST-209) or the Office of Student Programs (ST-2M7).
	* Each course falls into one or more liberal arts *clusters,* specified in the list. The six courses must collectively occupy at least three clusters. The four clusters are: (f) Professional and Ethical Responsibilities, (g) Communication, (h) Global and Societal Context, and (j) Contemporary Issues.
	* Most students must also satisfy Pathways liberal arts requirements. See ccny.cuny.edu/engineering/pathways .
3. 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.
4. 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.
5. 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.
6. Students are not permitted to use both Csc 10200 and CSc 10300 as ME Electives.

**Total Credits: 130 – 131**