Mechanical Engineering Course Flowchart for Students Entering the Program in Fall 2019 - Spring 2020

Freshman Fall

- MATH 200 Calculus I 4 hrs.
- EGMN 103 Mechanical & Nuclear Engr. Practicum I 1 hr. Fall
- EGMN 190 Introduction to Mechanical & Nuclear Engr. 1 hr. Fall
- CHEZ 101 General Chemistry Lab 1 hr.
- CHEM 101 General Chemistry I 3 hrs.
- Social Science Elective (from VCU core list) 3 hrs.
- UNIV 111 Focused Inquiry I 3 hrs.

16 hrs.

Freshman Spring

- MATH 201 Calculus II 4 hrs.
- EGMN 203 Mechanical & Nuclear Engr. Practicum II 1 hr. Spring
- EGMN 215 Engineering Visualization & Computation 3 hrs. Spring
- PHYS 207 Physics I 5 hrs.
- UNIV 112 Focused Inquiry II 3 hrs.

16 hrs.

Sophomore Fall

- MATH 301 Differential Equations 3 hrs.
- ENGR 395 Professional Development 1 hr.
- PHYS 208 Physics II 5 hrs.
- EGMN 102 Statics 3 hrs.
- EGMN 309 Material Science 3 hrs. Fall
- UNIV 200 Writing and Rhetoric 3 hrs.

18 hrs.

Sophomore Spring

- MATH 307 Multivariate Calculus 4 hrs.
- EGMN 204 Thermo 3 hrs. Spring
- EGMN 202 Mechanics of Deformables 3 hrs.
- EGMN 201 Dynamics and Kinematics 3 hrs.
- EGRE 206 Electric Circuits 4 hrs. Spring

17 hrs.

Junior Fall

- STAT 441 Applied Statistics 3 hrs.
- EGMN 321 Numerical Methods 3 hrs. Fall
- EGMN 420 CAE Design 3 hrs. Fall
- EGMN 301 Fluid Mechanics 3 hrs. Fall
- EGMN 311 Solid Mech. Lab 1.5 hrs. Fall
- EGMN 300 Mechanical Sys. Design 3 hrs. Fall

16.5 hrs.

Junior Spring

- ECON 205 Economics of Product Dev. 3 hrs.
- EGMN 421 CAE Analysis 3 hrs. Spring
- EGMN 302 Heat Transfer 3 hrs. Spring
- EGMN 303 Thermal Sys. Design 3 hrs. Spring
- EGMN 312 Thermal Sciences Lab 1.5 hrs. Spring
- EGMN 315 Process and System Dyn. 3 hrs. Spring

16.5 hrs.

- ENGR 296 or 396 Internship Experience or ENGR 398 Co-Op Experience 0 hrs.

Prerequisites for EGMN 402: Complete 2 from EGMN 300, 303 and 420 AND complete 5 from EGMN 300, 301, 302, 303, 315, 321, 355, 420, 421, 416 and 455

Required 300+ hour Internship (typically in summer after junior yr.) or Co-Op (2-3 full-time work terms between freshman & senior years)

Senior Fall

- ENGR 496 Internship Review or ENGR 498 Review of Co-Op Exp. 0 hrs.
- ENGR 402 Senior Design Studio I 1 hr. Fall
- EGMN 402 Senior Design Lab I 2 hrs. Fall
- EGMN 416 Mechatronics 3 hrs. Fall Senior
- Engineering Elective 3 hrs.
- Engineering or Professional Elective 3 hrs.
- PHIL 201 Crit. Thinking about Moral Problems 3 hrs.

15 hrs.

Senior Spring

- **130 credits required to graduate**
- ENGR 403 Senior Design Studio II 1 hr. Spring
- EGMN 403 Senior Design Lab II 2 hrs. Spring
- Science Elective (from VCU core list) 3 hrs.
- Engineering Elective 3 hrs.
- Engineering or Professional Elective 3 hrs.
- MGMT 310 Managing People in Orgs 3 hrs. Junior

15 hrs.

An engineering elective must meet all of these 4 criteria: 1) engineering course (CLSE, CMSC, EGMN, EGRB, EGRE, or ENGR), 2) ≥ 300 level, 3) ≥ 3 credits & 4) not otherwise required for the major. A professional elective must meet the same 4 criteria except the ACCT, ANAT, BIOC, BIOL, BIOS, BNFO, BUSN, CHEM, ECON, ENVS, FIRE, HSEP, INFO, INNO, INSC, LFSC, MATH, MGMT, MKTG, NANO, OPER, PHIS, PHYS, STAT, SCMA & VNTR rubrics are allowed.

Engineering Course | Math Course | Business Course | Engineering or Professional Elective | Engineering Elective | Science Course | Gen. Ed. Course

Arrows (Any Color): → Prerequisite; ····▶ Corequisite

Fall = May Only Be Offered in Fall Semesters
Spring = May Only Be Offered in Spring
Junior = Junior Standing to Enroll

Students must earn a minimum grade of C in UNIV 112 and 200; PHYS 207; all EGMN, ENGR, and MATH courses used to fulfill graduation requirements; and all courses used to fulfill engineering and professional elective requirements.

Please refer to the VCU Undergraduate Bulletin for the official list of required courses.