Mechanical Engineering Course Flowchart for Students Entering the Program in Fall 2016 - Spring 2017

**Freshman Fall**
- MATH 200 Calculus I (4 hrs.)
- EGMN 103 Mechanical & Nuclear Engr. Practicum I (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.)
- MATH 307 Multivariate Calculus (4 hrs.)
- PHYS 207 Physics I (5 hrs.)
- PHYS 208 Physics II (5 hrs.)
- EGMN 102 Statics (3 hrs.)
- UNIV 112 Focused Inquiry II (3 hrs.)
- UNIV 200 Writing and Rhetoric (3 hrs. Soph.)
- 16 hrs.

**Sophomore Fall**
- MATH 301 Differential Equations (3 hrs.)
- EGMN 203 Mechanical & Nuclear Engr. Practicum II (1 hr. Spring)
- EGMN 215 Engineering Visualization & Computation (3 hrs. Spring)
- EGMN 102 Statics (3 hrs.)
- 18 hrs.

**Sophomore Spring**
- MATH 307 Multivariate Calculus (4 hrs.)
- ENGR 395 Professional Development (1 hr.)
- 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 310 Fluid Mechanics (3 hrs. Fall)
- EGMN 309 Material Science (3 hrs. Fall)
- EGMN 303 Thermal Sciences Lab (1.5 hrs. Spring)
- 16.5 hrs.

**Junior Spring**
- EGMN 420 CAE Design (3 hrs. Fall)
- EGMN 421 CAE Analysis (3 hrs. Spring)
- EGMN 302 Heat Transfer (3 hrs. Spring)
- EGMN 301 Fluid Mechanics (3 hrs. Fall)
- EGMN 300 Mechanical Sys. Design (3 hrs. Fall)
- EGMN 315 Process and System Dyn. (3 hrs. Spring)
- 16.5 hrs.

**Senior Fall**
- EGR 296, 396, or 398 Internship Experience or Co-Op Experience (0 hrs.)
- ENGR 496 or 498 Internship Review or Review of Co-Op Experience (0 hrs.)
- ENGR 402 Senior Design Studio I (1 hr. Fall)
- ENGR 403 Senior Design Studio II (1 hr. Spring)
- EGMN 416 Mechatronics (3 hrs. Fall Senior)
- ENGR 402 Senior Design Lab I (2 hrs. Fall)
- ENGR 403 Senior Design Lab II (2 hrs. Spring)
- Science Elective (from VCU core list) (3 hrs.)
- Technical Elective (required to graduate)
- 130 credits

**Senior Spring**
- Technical Elective (required to graduate)
- Technical Elective (required to graduate)
- Technical Elective (required to graduate)
- Technical Elective (required to graduate)
- 15 hrs.
- 15 hrs.

**Required 300+ hour Internship (typically in summer after junior yr.)** (between freshman & senior years)

A technical elective (TE) must meet all of the following 4 criteria: engineering course (CLSE, CMSC, EGMN, EGRB, EGRE, or ENGR), not otherwise required for the major, 300-level or greater, & 3 or more credit hours. INNO 460 can be a TE. One TE can be selected from: FIRE 311 or 520, INFO 360 or PHYS 320.

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 technical elective requirements.

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