



## Program of Study

### Degree Requirements (126 hours)

#### 1. Carolina Core (34-46 hours)

- a. **CMW** (6 hours)
  - i. ENGL 101 - Critical Reading and Composition *—must be passed with a grade of C or higher*
  - ii. ENGL 102 - Rhetoric and Composition
- b. **ARP** (8 hours) *—must be passed with a grade of C or higher*
  - i. MATH 141 - Calculus I
  - ii. MATH 142 - Calculus II
- c. **SCI** (8 hours) *—must be passed with a grade of C or higher*
  - i. CHEM 111 - General Chemistry I
  - ii. CHEM 111L - General Chemistry I Laboratory
  - iii. PHYS 211 - Essentials of Physics I
  - iv. PHYS 211L - Essentials of Physics I Lab
- d. **GFL** (0-6 hours): Students in the College of Engineering and Computing are required to demonstrate proficiency in one foreign language equivalent to the 121 course by 1) a score of two or better on the foreign language placement test; or 2) completion of the 109 and 110 courses in FREN, GERM, LATN, or SPAN or completion of the 121 course in another foreign language.
- e. **GHS** (3 hours): any approved CC-GHS course
- f. **GSS** (3 hours): any approved CC-GSS course
- g. **AIU** (3 hours): any approved CC-AIU course

#### **Carolina Core Stand Alone or Overlay Eligible Requirements:**

Up to two of these requirements may be met in overlay courses. At least one of these requirements must be satisfied by a course not applied elsewhere in general education. (3-9 Hours)

- h. **CMS** (3 hours) Choose from:
  - i. PHIL 325 - Engineering Ethics (CMS/VSR overlay)
  - ii. any approved overlay or stand-alone CC-CMS course
- i. **INF** (0-3 hours): any approved overlay or stand-alone CC-INF course
- j. **VSR** (0-3 hours) Choose from:
  - i. PHIL 325 - Engineering Ethics (CMS/VSR overlay)
  - ii. any approved overlay or stand-alone CC-VSR course

#### 2. College Requirements: No college-required courses for this program.

#### 3. Program Requirements (50 hours)

- a. **Supporting Courses** (47 hours)
  - i. CHEM 112 - General Chemistry II
  - ii. CHEM 112L - General Chemistry II Laboratory
  - iii. MATH 241 - Vector Calculus
  - iv. MATH 242 - Elementary Differential Equations
  - v. PHYS 212 - Essentials of Physics II
  - vi. PHYS 212L - Essentials of Physics II Lab
  - vii. STAT 509 - Statistics for Engineers
  - viii. **Lower Division Engineering** (21 hours):
    1. EMCH 101 - Introduction to Mechanical Engineering *or* ENCP 101 - Introduction to Engineering I

2. EMCH 111 - Introduction to Engineering Graphics and Visualization *or* ENCP 102 - Introduction to Engineering II
  3. EMCH 200 - Statics *or* ENCP 200 - Statics –*must be passed with a grade of C or higher*
  4. EMCH 201 - Introduction to Applied Numerical Methods *or* ENCP 201 - Introduction to Applied Numerical Methods
  5. EMCH 260 - Introduction to the Mechanics of Solids *or* ENCP 260 - Introduction to the Mechanics of Solids
  6. EMCH 290 - Thermodynamic Fundamentals *or* ENCP 290 - Thermodynamic Fundamentals
  7. ELCT 220 - Electrical Engineering for Non-Majors *or* ELCT 221 - Circuits
- ix. **Mechanical Engineering Electives** (9 hours) Choose from:
1. EMCH 308 - Introduction to Finite Element Stress Analysis
  2. EMCH 441 - Automotive System Fundamentals
  3. EMCH 460 - Special Problems
  4. EMCH 497 - Design of Thermal Systems
  5. Any EMCH course numbered 500 or higher.
- b. **Free Elective** (3 hours)
- Any course taken at the University or transferred in as a University course that does not essentially duplicate a course otherwise applied to the degree. A list of such courses that cannot be used as a free elective is maintained in the department office. This list includes: ENCP 101, 102, 200, 201, 210, 260, 290, 330, 360, 491, 492; ECHE 101, 310, 320, 321; ECIV 101, 111, 200, 201, 210, 220, 360; BMEN 101, 211, 260, ELCT 101.
4. **Major Requirements (42 hours)**
- a. **Major Courses** (42 hours)
- i. EMCH 310 - Dynamics *or* ENCP 210
  - ii. EMCH 327 - Design of Mechanical Elements
  - iii. EMCH 330 - Mechanical Vibrations *or* ENCP 330
  - iv. EMCH 332 - Kinematics and Dynamics of Machines
  - v. EMCH 354 - Heat Transfer
  - vi. EMCH 360 - Fluid Mechanics *or* ENCP 360
  - vii. EMCH 361 - Mechanical Engineering Laboratory I
  - viii. EMCH 362 - Mechanical Engineering Laboratory II
  - ix. EMCH 363 - Mechanical Engineering Laboratory III
  - x. EMCH 371 - Engineering Materials
  - xi. EMCH 377 - Manufacturing Processes
  - xii. EMCH 394 - Thermodynamic System Design and Analysis
  - xiii. EMCH 427 - Mechanical Design I
  - xiv. EMCH 428 - Mechanical Design II

### **Program GPA**

Program GPA requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, the following courses are used to determine the Program GPA for the Mechanical Engineering B.S.E. program: All Lower Division Engineering courses, all Mechanical Engineering Major courses, and all courses used to satisfy a Mechanical Engineering Elective.