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.