UNIVERSITY OF SOUIHCAROLINA

## Program of Study

## Degree Requirements (130 hours)

1. Carolina Core ( $\mathbf{3 4}-\mathbf{4 6}$ 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 bigher
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. SPCH 140 - Public Communication
iii. any approved overlay or stand-alone CC-CMS course
i. INF (0-3 hours): ENGL 102 or 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. PHIL 322 - Environmental Ethics
iii. any approved overlay or stand-alone CC-VSR course
2. College Requirements: None required by the College of Engineering and Computing
3. Program Requirements (70 hours)
a. Supporting Courses (70 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 (18 hours):

1. ECIV 101 - Introduction to Civil Engineering or ENCP 101 - Introduction to Engineering I
2. ECIV 200-Statics or ENCP 200 - Statics -must be passed with a grade of C or bigher
3. ECIV 201 - Computational Methods for Civil Engineering or ENCP 201 - Introduction to Applied Numerical Methods
4. ECIV 210 - Dynamics or ENCP 210 - Dynamics - must be passed with a grade of C or bigher
5. ECIV 220 - Mechanics of Solids or ENCP 260 - Introduction to the Mechanics of Solids must be passed with a grade of $C$ or bigher
6. ECIV 360 - Fluid Mechanics or ENCP 360 - Fluid Mechanics
ix. ECIV Laboratory Courses (2 hours) Select two of the following:
7. ECIV 303L - Civil Engineering Materials Laboratory
8. ECIV 330L - Geotechnical Laboratory
9. ECIV 340L - Transportation Engineering Laboratory
10. ECIV 350L - Introduction to Environmental Engineering Laboratory
11. ECIV 362L - Introduction to Water Resources Engineering Laboratory
x. ECIV Distribution Courses (12 hours) One course from four of the following five areas:
12. Environmental Engineering

- ECIV 551 - Elements of Water and Wastewater Treatment
- ECIV 555 - Principles of Municipal Solid Waste Engineering
- ECIV 556 - Air Pollution Control Engineering
- ECIV 557 - Sustainable Construction for Engineers
- ECIV 558 - Environmental Engineering Process Modeling

2. Structural Engineering

- ECIV 325 - Structural Steel Design
- ECIV 327 - Reinforced Concrete Design

3. Transportation Engineering

- ECIV 540 - Transportation Systems Planning
- ECIV 541 - Highway Design
- ECIV 542 - Traffic Engineering
- ECIV 580 - Railway Engineering I


## 4. Geotechnical Engineering

- ECIV 530 - Foundation Analysis and Design

5. Water Resources Engineering

- ECIV 560 - Open Channel Hydraulics
- ECIV 562 - Engineering Hydrology
- ECIV 563 - Subsurface Hydrology
xi. ECIV Elective Courses (12 hours): Four ECIV electives chosen from additional ECIV courses numbered

300 and above.
xii. Science Electives (3 hours):

1. BIOL 101 - Biological Principles I
2. BIOL 102-Biological Principles II
3. BIOL 110 - General Biology
4. BIOL 250 - Microbiology
5. BIOL 270 - Introduction to Environmental Biology
6. BIOL 300 or above
7. ENVR 321 - Environmental Pollution and Health
8. GEOL 201 - Observing the Earth
9. GEOG 563 - Advanced Geographic Information Systems
10. GEOL 300 or above
11. MSCI 300 and above
xiii. Engineering, Science or Mathematics (ESM) Electives (6 hours)
12. Additional ECIV courses from the Distribution and Elective categories
13. ENCP 290 or above (not 310 or 360 )
14. ECHE 310 and above
15. ELCT above 201
16. EMCH 290 or above (not 310 or 360 )
17. CSCE 211 and above
18. PHYS above 212
19. GEOG 563 - Advanced Geographic Information Systems
20. GEOL 300 or above
21. BIOL 101 - Biological Principles I
22. BIOL 102 - Biological Principles II
23. BIOL 110 - General Biology
24. BIOL 250 - Microbiology
25. BIOL 300 and above
26. MSCI 300 and above
27. CHEM above 112
28. MATH 521 - Boundary Value Problems and Partial Differential Equations
29. MATH 544 - Linear Algebra
30. MATH 550 - Vector Analysis
31. STAT 511 - Probability
32. NAVY 201 - Naval Ships Systems I
33. NAVY 202 - Naval Ships Systems II
34. NAVY 301 - Navigation/Naval Operations I
35. ENVR 501 - Special Topics in the Environment
36. Major Requirements ( 26 hours)
a. Major Courses (26 hours)
i. ECIV 111 - Introduction to Engineering Graphics and Visualization or ENCP 102 - Introduction to Engineering II
ii. ECIV 303-Civil Engineering Materials
iii. ECIV 320 - Structural Analysis I
iv. ECIV 330 - Introduction to Geotechnical Engineering
v. ECIV 340 - Introduction to Transportation Engineering
vi. ECIV 350 - Introduction to Environmental Engineering
vii. ECIV 362 - Introduction to Water Resources Engineering
viii. ECIV 405 - Systems Applications in Civil Engineering
ix. ECIV 470 - Civil Engineering Design

## Major GPA

Major 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 Major GPA for the Civil Engineering B.S.E. program: all Civil Engineering Lower Division courses, all Civil Engineering Major courses and all courses used to satisfy a ECIV
Laboratory Elective, ECIV Distribution Elective, and ECIV Elective.
Professional Development Requirement
This requirement is satisfied by completing one or more program-accepted Carolina Core courses for CMS and VSR, by ENGL 462, ENGL 463, PHIL 323, PHIL 324, or SPCH 230.

