

The South Carolina Corps of Cadets

BACHELOR OF SCIENCE
IN CIVIL ENGINEERING



**THE
CITADEL**
THE MILITARY COLLEGE OF SOUTH CAROLINA

THE CITADEL SCHOOL OF ENGINEERING

The Citadel's Civil Engineering Program is nationally accredited by the Engineering Accreditation Commission of ABET (www.abet.org). ABET ensures engineering programs prepare students for professional practice and licensure. The Citadel is accredited by Southern Association of Colleges and Schools Commission on Colleges.

For information on Civil Engineering:

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To apply to The Citadel
contact **The Citadel Admissions** at:

Phone: (843) 953-5230
Email: admissions@citadel.edu

or at or apply online at:
www.citadel.edu/admissions

Your Undergraduate Experience

The ever changing engineering workforce has led to a job market with companies looking to hire talented team members who possess a technical and professional skillset. The Civil Engineering program will prepare you for career advancement in industry or the military.

- A faculty adviser assigned to you will create a student experience around your career goals, which allows you to obtain the exact knowledge and skills needed to move your career forward in an innovative world.
- Within the School of Engineering, faculty are primarily focused on teaching in their discipline.
- The School of Engineering has been ranked in the Top 25 U.S. News & World Report (2014, 2015, 2016, 2017, 2018) for best undergraduate engineering programs at schools offering up to a masters degree.
- Our graduates thrive in competitive job markets, graduate programs, or the military.

About the Civil Engineering Program

Engineering Design

Graduates gain a solid foundation that leads to successful employment in the private and public sectors.

Sustainable Success

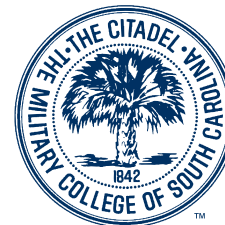
Graduates have sustainable career success and participate in leadership roles by demonstrating lifelong learning, effective communication, and contributions on multidisciplinary teams.

Broad Based Education

Graduates have a broad educational background, which serves as a foundation for citizenship through leadership, management, decision making, and problem-solving abilities.

Interaction with Faculty

Civil engineering faculty maintain an open door policy and interact with students on many issues, including academic advising, course assignments, student projects, career planning, research, professional development, and engineering teamwork. The Citadel is distinguished by small classes, all led by accomplished professors. Students and faculty work together in a closely-knit dynamic environment to realize remarkable scholarly achievement and student enrichment.



Why The Citadel is Right for You?

Students are our Focus

We believe that education, development, empowerment, and welfare of our students are the primary focus of our efforts.

Civil Engineers as Principled Leaders

We believe the engineering profession requires the highest professional and ethical standards, which we seek to model, teach and prepare our students to embrace.

Collaborative Teaching and Learning Environment

We believe a collaborative collegial environment among our faculty, staff and students is critical in sustaining advancement in educational excellence.

Growth Through Assessment

We believe in data-driven inquiry and improvement will lead us to sustained advancement in educational excellence.





BACHELOR OF SCIENCE IN CIVIL ENGINEERING CURRICULUM

About Our Program

The civil engineering course curriculum focuses on practical issues related to engineering design and professional practice. Courses prepare students for challenging careers in civil engineering and include four discipline specific concentrations:

Structural Engineering

Mechanics of materials, structural engineering systems, reinforced concrete design, and steel design.

Environmental Engineering

Air pollution and air quality control, hazardous and solid waste, hydraulics, hydrology, water resources, and water/wastewater treatment plant design.

Geotechnical Engineering

Soil mechanics, soil sampling and testing, shallow and deep foundations, and retaining wall design.

Transportation Engineering

Airport design, maritime shipping facilities, public transit, traffic control devices, highway safety and roadway design.

The curriculum culminates with a comprehensive capstone design course focusing on land development, environmental, structural, or transportation engineering. Students prepare design documents and engineering drawings within a context of professional practice.

Freshman Year

Fall Semester

ENGL 101 Composition and Literature I – 3
 BIOL 150 General Biology for Engineers – 3
 BIOL 151 General Biology for Engineers Lab – 1
 MATH 131 Analytical Geometry and Calc I – 4
 HIST Western or World Civilizations – 3
 CIVL 103 Intro to Civil Engineering – 1
 LDRS 101 First Year Seminar – 1
 RPED 250 Required Physical Education – 2

Spring Semester

ENGL 102 Composition and Literature II – 3
 PHYS 221 Physics with Calc I – 3
 PHYS 271 Physics with Calc I Lab – 1
 MATH 132 Analytical Geometry and Calc II – 4
 HIST Western or World Civilizations – 3
 CIVL 101 Engineering Drawing – 2
 LDRS 111 Freshman Ethical Fitness Seminar – 0
 RPED 251 Required Physical Education – 2

Sophomore Year

Fall Semester

ENGL 201 Major British Writers – 3
 CHEM 151 General Chemistry I – 3
 CHEM 161 General Chemistry I Laboratory – 1
 MATH 231 Analytical Geometry and Calc III – 4
 CIVL 205 Surveying – 3
 CIVL 235 Surveying Lab – 1
 CIVL 210 Computer Apps for Civil Engineers – 3
 LDRS 201/11 Sophomore Seminar/Laboratory

Spring Semester

ENGL Approved English Elective – 3
 CHEM 152 General Chemistry II – 3
 CHEM 162 General Chemistry II Laboratory – 1
 MATH 234 Applied Mathematics I – 4
 CIVL 202 Statics – 3
 CIVL 208 Geospatial Representation – 3
 CIVL 239 Geomatics Lab – 1
 RPED Required Physical Education – 0

Junior Year

Fall Semester

CIVL 301 Dynamics – 3
 CIVL 304 Mechanics of Materials/Lab – 3
 CIVL 305 Transportation Engineering – 3
 CIVL 307 Materials Lab – 1
 CIVL 314 Engineering Economy – 2
 CIVL 317 Professional Sustainability – 1
 CIVL 320 Fluid Mechanics – 3
 CIVL 330 Measurement, Analysis, & Modeling for CEE Systems – 3
 LDRS 311 Junior Ethics Enrichment Sem. – 0

Spring Semester

CIVL 302 Highway Engineering – 3
 CIVL 327 Asphalt & Concrete Lab – 1
 CIVL 309 Structural Analysis – 4
 CIVL 321 Hydrology & Hydraulics – 3
 CIVL 322 Intro to Environmental Engineering – 3
 ELEC 308 Elements of Electrical Engineering – 3
 RPED Required Physical Education – 0

Senior Year

Fall Semester

CIVL 404 Reinforced Concrete Design – 3
 CIVL 408 Water & Wastewater Management – 3
 CIVL 409 Intro to Geotechnical Engineering – 3
 CIVL 418 Fluid Mechanics Lab – 1
 () Social Science Core Course – 3
 () Technical Elective – 3
 LDRS 411 Senior Leadership Integration Sem – 0

Spring Semester

CIVL 402 Geotechnical Lab – 1
 CIVL 410 Geotechnical Engineering II – 3
 CIVL 406 Steel Design – 3
 CIVL 419 Environmental Engineering Lab – 1
 CIVL Civil Engineering Design Elective – 3
 () Humanities/Social Science – 3

**Basic ROTC during each semester of freshmen and sophomore years. Advanced ROTC or Leadership required each semester junior and senior year.*

Why Study Civil Engineering?

Engineering employment opportunities include serving as technical experts, designers, constructors and managers of major civil engineering projects such as power plants, waterways, airports, schools, hospitals, wetlands preservation, environmental protection, and many other public works and commercial infrastructure projects.

“The professors in the engineering department have proven time and again their dedication and commitment to the success of their students. They consistently keep the topics we learn in class relevant by means of sharing their personal careers and their real-world experience. Instead of just learning the foundations of engineering theories and concepts, our professors provide insight into how these skills will be important to our careers in the future. In addition to the wonderful faculty and staff, the engineering department also provides numerous clubs and activities in which I have had the privilege to take part. These clubs are tailored to almost any interest an engineering student may have.”

Amber Mills, Class of 2015

