THE CITADEL
SCHOOL OF ENGINEERING

The Citadel is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools.

For information on Mechanical Engineering:

www.citadel.edu/mechanical or

me@citadel.edu

SCAN ME FOR INFO

To apply to The Citadel

Contact The Citadel Admissions at:

Phone: 843-953-5230

Email: admissions@citadel.edu

or apply online at:

www.citadel.edu/admissions

The South Carolina Corps of Cadets

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

THE CITADEL
THE MILITARY COLLEGE OF SOUTH CAROLINA

The Citadel Experience

Leadership in today's society means more than just getting to the top as fast as possible. Today's leaders must possess strong ethical and moral standards, as well as intelligence and experience to guide the way for others.

- At The Citadel, leader development begins immediately by learning followership.
- Citadel cadets live in barracks as citizen soldier and follow a regimented schedule from Reveille to Taps.
- You learn to live by the Honor Code, a hallmark of Citadel life.
- You learn about attention to detail, respect, time management and self-discipline.
- You develop strong, life-long bonds with your classmates as you rise to new challenges and push yourself past what you may have thought was possible.
- As a member of the Long Gray Line, you will continue your leadership development throughout your life.

About the Mechanical Engineering Program

Program Vision

Achieving excellence in the education of principled mechanical engineering leaders by being a recognized leader in mechanical engineering education and student performance.

Curriculum

The Mechanical Engineering curriculum places emphasis on a broad liberal education base, a strong background in mathematics and basic sciences, and a logical sequence of Mechanical Engineering courses that provide the breadth and depth necessary for continuous professional growth in today's technological society.

Engineering design problems, concepts, and laboratories are included throughout the curriculum and the experience is capped by a mandatory two-semester senior design course in which the students undertake significant design projects.

Dedicated, High Quality Faculty

Mechanical 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 close-knit dynamic environment. Coming from backgrounds in academia, industry, and the military, the faculty primarily focuses on one imperative: engineering undergraduate education.

Why The Citadel is Right for You

Focus on Students

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

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

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING CURRICULUM

The Mechanical Engineering program will incorporate a number of courses in the civil and electrical engineering programs. Courses prepare students for challenging careers in mechanical engineering and there are five main focus areas:

Power and Energy

The study of power and energy will give students the tools to create, improve, and maintain technologies that power the modern world.

Manufacturing

The study of manufacturing deals with the processes, equipment, and tools used to turn raw materials into a new product.

Aeronautical Systems

The aeronautical systems track is concerned with the research, design, development, testing, and science of aircraft.

Composites

The study of materials is concerned with the discovery and design of new materials. New composite materials are essential to creating advanced technologies and making current technologies stronger, smaller, or lighter.

Mechatronics

Mechatronics is the crossroads in engineering where mechanical engineering, electrical engineering, computer science, and controls engineering meet to created new and exciting real world systems.

Freshman Year[1]

Fall Semester

FSEM 101 Freshman Seminar - 3
FSWI 101 Freshman Seminar (Writing Intensive) - 3
CHEM 151 General Chemistry I - 3
CHEM 161 General Chemistry I Laboratory - 1
MATH 131 Analytic Geometry and Calculus I - 4
ENGR 101 Introduction to Engineering - 2
LDRS 101 First Year Seminar - 1

Spring Semester

BIOL 150 General Biology for Engineers - 3
or CHEM 152 General Chemistry II - 3
BIOL 151 General Biology for Engineers Laboratory - 1
or CHEM 162 General Chemistry II Laboratory - 1
MATH 132 Analytic Geometry and Calculus II - 4
PHYS 221 Physics with Calculus I - 3
PHYS 271 Laboratory for Physics with Calculus I - 1
MECH 125 Computer Applications w/Lab - 3
RPED 260 Physical Fitness, Resiliency, & Wellness - 3

Sophomore Year[1]

Fall Semester

COMM 260 Technical Writing and Communication - 3
PHYS 222 Physics with Calculus II - 3
PHYS 272 Laboratory for Physics with Calculus II - 1
MATH 231 Analytic Geometry and Calculus III - 4
CIVL 202 Statics - 3
LDRS 211 Sophomore Seminar Service Learning Lab - 0
MECH 202 Introduction to Engineering Programming - 3

Spring Semester

MATH 234 Applied Engineering Mathematics I - 4
ELEC 208 Principles of Electrical Engineering - 3
CIVL 203 Dynamics - 3
CIVL 304 Mechanics of Materials - 3
CIVL 307 Materials Laboratory - 1
MECH 265 Computational Methods in Engineering - 3

Junior Year[1]

Fall Semester

MECH 304 Engineering Materials w/Lab - 3
MECH 315 Thermodynamics w/Lab- 3
MECH 330 Measurements and Instrumentation w/Lab - 3
MECH 340 Manufacturing Processes w/Lab - 3
MECH 350 Modeling and Analysis of Dynamic Systems I - 3
LDRS 311 Junior Ethics Enrichment Experience - 0
LDRS 371 Leadership in Organizations - 3

Spring Semester

( ) Technical Elective - 3
MECH 316 Fluid Mechanics w/Lab – 3
MECH 345 Machine Design - 3
MECH 351 Modeling and Analysis of Dynamic Systems II w/ Lab - 3
MECH 360 Mechanical Engineering System Design - 3
LDRS 202 Principled Leadership in American Government and Society - 3

Senior Year[1]

Fall Semester

MECH 415 Heat Transfer - 3
MECH ( ) ME Option I - 3 [2]
MECH 481 Senior Design I - 3
MECH 450 Mechatronics w/Lab - 3
LDRS 411 Senior Leadership Integration Seminar - 0
( ) Strand ENGS/HISS/Soc Sci - 3 [3]

Spring Semester

MECH 482 Senior Design II - 3
( ) Strand ENGS/HISS/Soc Sci - 3 [3]
( ) Strand ENGS/HISS/Soc Sci - 3 [3]
MECH ( ) ME Option II - 3 [2]
MECH ( ) Mechanical Elective - 3

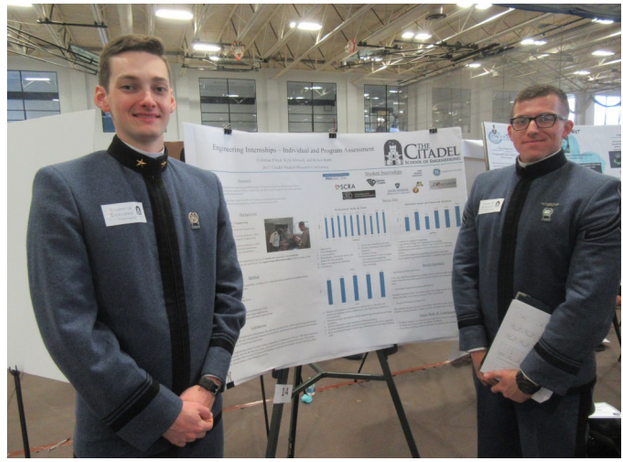
Notes

1. Basic ROTC during each semester of freshmen and sophomore years. Advanced ROTC or Leadership required each semester junior and senior year.
2. The Mechanical Engineering Options (2 each) may be taken from one of the following: Power and Energy; Manufacturing; Aeronautical Systems; Composites; and Mechatronics
3. Strand courses must be taken from a list of approved courses in completing the Strand requirements.

Why Study Mechanical Engineering?

"Mechanical engineers fill a wide variety of critical roles in companies, from CAD designers to top executives. A foundation of technical understanding, critical thinking and problem solving make mechanical engineers a highly valued resource at many different levels throughout industry. In an age of high technological advances through electrical and computer engineering, mechanical engineers are needed now more than ever. No matter what technology can be put on a ship, plane, car or your mobile phone, eventually a mechanical action to turn a shaft, spin a turbine, stamp a part, or even to assemble your smart phone must happen. Mechanical engineers put innovative ideas into action."

Gregory Gordon
Defense Engineering Services



"I enjoy working with fellow students and faculty on research projects. I am confident this major will prepare me for a variety of career paths in the mechanical engineering field."

Kyle Johnson