PHYSICS, B.S. - ENGINEERING

The program outline and graduation requirements are listed below. In addition, free electives are selected to reach 120 credits overall required for graduation.

The department website provides an overview of the program, admission requirements (when applicable), faculty biographies, learning outcomes, and careers: https://www.southernct.edu/academics/physics/programs

GENERAL EDUCATION REQUIREMENTS

All bachelor’s degree programs include liberal education (LEP) and writing (W) course requirements. Detailed information on these requirements is published in this section of the catalog: https://catalog.southernct.edu/undergraduate/general-information/lep.html.

Writing courses are not additional course requirements, course sections that meet this requirement are designated with a ‘W’ on the class schedule. Courses in the major and/or cognate may also be used to satisfy LEP requirements where noted below (*).

MAJOR REQUIREMENTS (37 Credits)

PHY 230 — Physics for Scientists and Engineers I (‘C-’ or better)
PHY 231 — Physics for Scientists and Engineers II (‘C-’ or better)
PHY 309 — Modern Physics (‘C-’ or better)
PHY 370 — Modern Physics Laboratory (‘C-’ or better)
PHY 461 — Methods in Physics Research
EGR 151 - Engineering Concepts
PHY 355 - Electricity and Electronics
EGR 471 - Capstone Experience for Engineering or PHY 471 - Capstone Experience in Physics (T3)*

Select one from:
EGR 251 - Engineering Mechanics I: Statics
PHY 251 - Engineering Mechanics I: Statics

Select an additional 9 credits from:
PHY 220 - Analytical Physics
PHY 340 - Lasers and Fiber Optics
PHY 398 - Special Topics in Physics
PHY 400 - Classical Mechanics I
PHY 405 - Scientific Computer Interfacing
PHY 406 - Electricity and Magnetism
PHY 410 - Optics
PHY 415 - Solid State Physics
PHY 430 - Thermodynamics
PHY 440 - Introduction to Quantum Mechanics
PHY 499 - Independent Study and Research
Or other PHY courses at the 200 level or above with permission of Physics Department Chairperson

**COGNATE REQUIREMENTS (41 Credits)**

CHE 120 - General Chemistry I (T2PR)*
CHE 121 - General Chemistry II
MAT 150 – Calculus I (T1QR)*
MAT 151 – Calculus II
MAT 252 – Calculus III
MAT 245 - Differential Equations

Select two from:
CSC 152 - Computer Programming I
CSC 153 - Computer Programming II
CSC 207 - Computer Systems
CSC 341 - Digital Imaging
CSC 370 - Computer Implementation of Statistical Methods
CSC 375 - Simulation Techniques

Or other CSC course with the permission of the Physics Department Chairperson

One of the following (12 or 18 Credits Required)

- Minor in Computer Science
- Minor in Chemistry
- Minor in General Management
- 12 additional credits in PHY, EGR, or MAT with advisor approval (Since all 100-level courses are introductory, a student may not receive credit for more than one of PHY 100, 101, 103, and 111).