

WASHINGTON UNIVERSITY DUAL DEGREE PROGRAM

CURRICULUM GUIDE

for Carleton College students

Foundation Courses required of all Majors:

- i. MATHEMATICS
 - The full sequence of Calculus (MATH 111, 121, and 210 or 211)
 - Differential Equations (MATH 241)

- ii. PHYSICS
 - Mechanics and Thermodynamics (PHYS 131 and 152 – Fall Term only)
Note: PHYS 131 is a 1st 5-week course and PHYS 152 is a 2nd 5-week course both taught in the fall. Students can also take 143 and 144 to cover PHYS 131, but must still take PHYS 152.
Students majoring in Physics at Carleton should take PHYS 131 and PHYS 151 (not 152), or the equivalent PHYS 143 or 144, and PHYS 346. Note that PHYS 346 is only offered in alternate years. PHYS 152 can be taken, but will not fulfill the applied physics requirement for the major and does not fill pre-reqs for the physics major.
 - Electricity, Magnetism, and Optics (PHYS 165, formerly PHYS 161/162)
Students majoring in Physics at Carleton should take PHYS 235 and either PHYS341 or PHYS344 as an applied physics courses.

- iii. CHEMISTRY
 - General Chemistry I (CHEM 123)
Students going on to study Chemical Engineering are strongly encouraged to take CHEM 128 instead of CHEM 123

- iv. COMPUTER SCIENCE
 - Introduction to computer science and programming (CS 111)
Chemical Engineering and Mechanical Engineering also requires MATLAB proficiency.

- v. ENGLISH
 - Completion of Carleton Writing Portfolio Graduation Requirement

- vi. HUMANITIES AND SOCIAL SCIENCES
 - No fewer than 15 semester hours (27 Carleton credits) in approved areas, must include six semester hours (12 Carleton credits) in Humanities and three semester hours (6 Carleton credits) in Social Sciences.

- vii. TOTAL CREDITS
 - A minimum of 90 semester hours (162 Carleton credits) of transferable college credit (courses with grades below C- do not transfer).

In addition, there are some department specific requirements.

BIOMEDICAL ENGINEERING

BIOLOGY

- Biology sequence that covers cellular, molecular and developmental biology and genetics (BIO 125 and BIO 126)

CHEMISTRY

- General Chemistry II (CHEM 230)
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CHEMICAL ENGINEERING

BIOLOGY

- Biology sequence that covers cellular, molecular and developmental biology (BIO 126)

CHEMISTRY

- General Chemistry II (CHEM 230)
- Organic Chemistry I (CHEM 233)

STRONGLY ENCOURAGED COURSES

- MATLAB proficiency (A certificate of completion from an online course will suffice)
 - A course on energy and environment from a scientific point of view (PHYS 152 or CHEM 128)
 - Organic Chemistry II (CHEM 234)
 - Physical Chemistry (CHEM 343 and CHEM344)
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COMPUTER SCIENCE & COMPUTER ENGINEERING

COMPUTER SCIENCE

- A second computer programming course (CS 201)