

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, 211)
 - Differential Equations (MATH 241)
- ii. PHYSICS
 - Mechanics and Thermodynamics (PHYS 131 or 142 and 152)
Students majoring in Physics at Carleton should take PHYS 131, 141 or 142 and PHYS 151 and PHYS 346 as one of the applied physics courses. Note that PHYS 346 is offered in alternate years. PHYS 152 could be substituted for PHYS 346 but will not fulfill the applied physics requirement for the 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
 - English Composition (ENGL 109)
- vi. HUMANITIES AND SOCIAL SCIENCES
 - No fewer than 18 semester hours (33 Carleton credits) in approved areas, must include six semester hours (12 Carleton credits) in Humanities and six semester hours (12 Carleton credits) in Social Sciences, with at least three semester hours (6 Carleton credits) at the junior/senior or 300-400 level.
- vii. TOTAL CREDITS
 - A minimum of 60 semester hours (108 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)
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COMPUTER SCIENCE & COMPUTER ENGINEERING

COMPUTER SCIENCE

- A second computer programming course (CS 201)