Dual Degree Math and Computer Science

Program Overview

This program gives students the opportunity to gain a broad background in the humanities and social sciences while also pursing an engineering degree. Capital University has agreements with both Case Western Reserve University in Cleveland, OH and Washington University in St. Louis, MO whereby students attend Capital for three years and then engineering school for two years. At the end of five years, the student will earn a bachelor of arts degree from Capital University and a bachelor of science degree in engineering from either Case Western Reserve or Washington Universities.

Case Western Reserve Transfer Requirements

- English: satisfactory completion of Capital's requirement
- Math: courses equivalent to two years up through differential equations
- Physics: one year of calculus-based physics, including lab
- Chemistry: courses and labs equivalent to one year for science majors
- Computer Programming: one course to develop programming skills
- Humanities and Social Sciences: completion of Capital's requirements, provided it is at least 21 semester hours
- A 3.0 or better GPA is required for admission to the program, although students with a lower GPA may apply as transfer students

Washington University Transfer Requirements

- Math: sequence through multivariate calculus, plus differential equations
- Physics: one year calculus-based sequence, including lab
- Chemistry: one semester, including lab; full year for biomedical engineering
- Organic Chemistry: one year sequence (required for chemical engineering only)
- Computer Programming: one course in a high-level language (C++, Java); second course for computer engineering
- English: evidence of ability to communicate effectively in written form as demonstrated by coursework, acceptable examination scores, or college certification of proficiency 1
- Humanities and Social Sciences: 18+ semester hours, 8 of which must be in one department. No more than 9 semester hours of the performing arts or skill courses may count toward the required 18 semester hours
- Biology - fundamental biology sequence plus a course in cell biology (biomedical engineering only)
- Minimum GPA of 3.25, both overall and in science and mathematics courses, is required for admission to the program
- 60+ semester hours of transferable credit with a minimum average grade of B or better. Courses with D+ or lower do not transfer

Case Western Reserve University Bachelor of Science Degrees in Engineering:

- Aerospace Engineering
- Biomedical Engineering
- Engineering
- Computer Engineering
- Macromolecular Science
- Materials Science
- Chemical Engineering
- Mechanical Engineering
- Systems Engineering
- Electrical Engineering

Washington University Bachelor of Science Degrees in Engineering:

- Biomedical Engineering
- Chemical Engineering
- Computer Engineering
- Electrical Science
- Mechanical Engineering
- Systems Engineering

Mathematics

Three Year Sample Curriculum

First Year, Fall
Calculus
Intro to Computer Science
College Reading and Writing
Chemical Principles

First Year, Spring
Calculus
Chemical Principles
Mathematical Proofs
Oral Communication

Second Year, Fall
Mathematical Statistics
Physics
Religious Foundations & the Bible
Fine Arts

Second Year, Spring
Calculus
Physics
Cultural Pluralism
Electives

Third Year, Fall
Linear Algebra
Humanities
Social Science
Java Programming
Seminar

Third Year, Spring
Mathematics Elective
Global Awareness
Differential Equations
Dynamic Systems

Computer Science

Three Year Sample Curriculum

First Year, Fall
Calculus
Introto Computer Science
College Reading and Writing
Chemical Principles
First Year Seminar

First Year, Spring
Calculus
Chemical Principles
Algorithms
Oral Communication
Discreet Mathematics

Second Year, Fall
Computer Architecture
General Physics
Ethical Issues
Religious Foundations & the Bible
Fine Arts

Second Year, Spring
Software Engineering
Calculus
Physics
Cultural Pluralism
Operating Systems

Third Year, Fall
Algorithms & Data Structures
Mathematical Statistics
Humanities
Social Science
Seminar

Third Year, Spring
Intro to Computational Science
Differental Equations
Programming Languages
Global Awareness
Elective

All courses subject to availability and advisor approval. All undergraduates must demonstrate that Signature Learning goals have been met.

Program Specific Organizations

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Learn More

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