ENGINEERING (3+2 and 4+2)

at Arcadia University and Columbia University

Global Perspectives…Personal Attention…Real-World Integrative Learning Experiences

This is a Combined Program with Columbia University in New York.

Advisers

Professor
Dr. Carlos W. Ortiz (Co-Coordinator)

Associate Professor
Dr. H. Stephen Huber (Co-Coordinator)

Degrees

Five-year 3+2 program: Bachelor of Arts or Science in Mathematics, Computer Science, Chemistry, or individual major in Applied Physics from Arcadia University and Bachelor of Science in Engineering or Applied Science from Columbia University

Six-year 4+2 program: Bachelor of Science or Master of Science in Engineering from Columbia University and Bachelor of Arts or Science in Mathematics, Computer Science, Chemistry, or individual major in Applied Physics from Arcadia University

Pathways to Study Abroad in Engineering

Students can elect to spend a semester or year studying abroad. In conjunction with their adviser and the Chair of the Department, students in their sophomore or junior year can enroll in classes at foreign universities. Credits for these courses transfer to Arcadia in order to fulfill Undergraduate Curriculum and/or upper-level Chemistry requirements.

Arcadia University has special arrangements with universities in England, Scotland, Wales and Northern Ireland, Australia, Ireland, Spain and New Zealand that offer Chemistry and Biochemistry courses.

Visit the University's Web site for Pathways to Study Abroad (www.arcadia.edu/pathways) and suggested course sequences. Since it is important that students plan ahead for study abroad, they should consult with their advisers as soon as possible and make their intentions known to the Department Chair and the Director of International Services.

About the Engineering Program with Columbia University

- Five-year option for two bachelor's degrees
- Six-year option for bachelor's and master's degrees
- Opportunities to study abroad at some of the top universities around the world

Arcadia University offers a combined five-year (3+2) Engineering Program with Columbia University in New York. This plan blends a strong liberal arts, science and mathematics foundation with an intensive engineering curriculum. The program prepares students for careers in industry or graduate work in engineering, mathematics, or the physical sciences. The program qualifies students to take the examination for professional engineers.

Typically, students complete the first three years at Arcadia University in programs in Mathematics, Computer Science, Chemistry, or an individualized major in Applied Physics. Upon recommendation of the program adviser, students then transfer to Columbia University for two years of advanced engineering study.

Upon completion of the five-year program, students are awarded the Bachelor of Arts degree from Arcadia University and the Bachelor of Science degree in Engineering or Applied Science from Columbia University.

Under the combined plan, a student may elect to pursue any one of the following programs at Columbia University:

- Applied Mathematics
- Applied Physics
- Biomedical Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Computer Science
- Earth and Environmental Engineering
- Electrical Engineering
- Engineering Mechanics
- Engineering and Management Systems

- Industrial Engineering and Operations Research
- Materials Science and Engineering
- Mechanical Engineering

Master's degree option: It is also possible for students to complete a four-year bachelor's degree program at Arcadia University and then take two additional years at Columbia University for a Master's Degree in Engineering.

Requirements for the Combined Program in Engineering

(96 credits at Arcadia University; two years at Columbia University)

1. Four courses in Mathematics
   MA 201 Calculus I
   MA 202 Calculus II
   MA 203 Calculus III
   MA 352 Differential Equations

2. One course in Chemistry
   CH 101 Modern Chemical Concepts I
   Strongly Recommended
   CH 102 Modern Chemical Concepts II

3. Two courses in Physics
   PH 211 Conceptual Physics I
   PH 212 Conceptual Physics II

4. The following two courses:
   EC 210 Principles of Macroeconomics
   CS 201 Problem-Solving with Algorithms and Programming I (Java)

5. Electives that would satisfy the Undergraduate Curriculum requirements of Arcadia University.

Additional Requirements

1. For the combined program in Applied Math, Applied Physics, Chemical Engineering, and Electrical Engineering:
   PH 324 Atomic Physics
   One additional 300-level Physics course.

2. For the combined program in Biomedical Engineering and Chemical Engineering: Physical Chemistry and/or Organic Chemistry

Students must satisfy all degree requirements of a major and the Arcadia University Curriculum at Arcadia University. (Please see individual departmental sections.)

To guarantee admission to Columbia University, students seeking admissions into the program shall have satisfied:

1. A minimum of 3.30 cumulative average GPA for all courses taken at Arcadia University. In addition, the minimum grade of each pre-engineering science and mathematics prerequisite must be B the first time the course was taken.
2. Each pre-requisite course must be taken at Arcadia University.
3. Students must have 3 positive letters of recommendation from Arcadia University; one from a co-coordinator, one from a science professor, and one from a mathematics professor. Both professors need to have taugh the students in his/her sophomore year or later.
4. Applicants who do not meet these criteria may apply, but admissions is not guaranteed.

Since Columbia's requirements may change, students are encouraged to consult Columbia University's Web page for the 3+2 program or an engineering adviser.