



**Application for Goucher College Dual Degree Science and Engineering Program  
(3+2)**

Student Name:

Student ID Number:

Student email address:

Major(s):

Minor(s):

Choose one:

1. Columbia University/Goucher College 3+2 Engineering Degree

2. Johns Hopkins University/Goucher College 3+2 Engineering Degree

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Goucher Program Director signature: \_\_\_\_\_

Date: \_\_\_\_\_

Goucher College has established dual-degree programs (typically called “3+2” programs) in partnership with Columbia University in the City of New York, and Johns Hopkins University in Baltimore, MD. The dual-degree program enables students to explore the liberal arts and sciences, while developing professional knowledge and experience in a specific field of engineering. Students in the program are admitted initially by Goucher College, where they will typically spend three years fulfilling liberal education requirements and completing major requirements for the B.A. degree in biology, biochemistry, chemistry, computer science, mathematics, or physics. Successful students who have met the necessary requirements will then complete an additional two years at the partner institution to complete a B.S. degree in engineering.

At the Fu Foundation School of Engineering and Applied Science of Columbia University, students can earn degrees in Applied Physics, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Earth and Environmental Engineering, Electrical Engineering, Engineering Management Systems, Industrial Engineering, Engineering Mechanics, Materials Science and Engineering, and Mechanical Engineering.

At the G.W.C. Whiting School of Engineering of the Johns Hopkins University, students can earn degrees in Electrical and Computer Engineering, Materials Science and Engineering, Mechanical Engineering, Chemical Engineering, and Civil Engineering.

Below is a brief explanation of each field.

Applied Physics and Applied Mathematics focus on applications derived from fundamental physical and mathematical principles. Examples include nanoscale engineering, optical devices, and space science.

Electrical and Computer Engineering include the fields of communications, control systems, electronics, and digital systems.

Chemical Engineering relies upon the laws of chemistry, physics, and mathematics to change the structure of chemical substances and purify new substances that are created in the process.

Biomedical Engineering is dedicated to solving problems and generating products through molecular scale biochemical and biological transformations, leading to the design of novel biological products and processes for medicine. (Note: JHU does not accept any transfer students to their Biomedical Engineering program at this time.)

Civil Engineering reflects the breadth of the engineering disciplines in the planning and designing of buildings, bridges, transportation systems, and environmental programs.

Environmental Engineering deals with the amelioration of environmental problems.

Materials Science and Engineering is concerned with the structure, properties, performance, processing, and production of all materials, including biomaterials.

Mechanical Engineering deals with the manipulation of energy through useful mechanical devices, including biomechanical devices.

For purposes such as payment of tuition, student governance, financial aid, and housing, participants in the 3+2 program are considered Goucher students during their first three years, and JHU or Columbia students during the last two.

Both the B.A. degree from Goucher College and the B.S. degree from JHU or Columbia are awarded at the conclusion of the fifth year, provided all requirements for each degree have been fulfilled. Interested students should contact the 3+2 Engineering program coordinator, Dr. Sasha Dukan.

### **3+2 Engineering Dual Degree with Columbia University**

During the three years at Goucher, student must take all the required science and mathematics foundational courses (listed below) as well as the specific pre-engineering courses for the engineering major of interest (listed below). Admission to the Columbia University is guaranteed if a student successfully meets all of the following requirements:

Full-time enrollment at Goucher College for at least past two years.

Minimum overall GPA of 3.30, inclusive of all coursework taken for credit.

Minimum pre-engineering GPA of 3.30, inclusive of all science and mathematics prerequisite coursework. Additionally, a minimum grade of B (3.0) must be obtained on the first attempt in all science and mathematics prerequisite coursework.

Successful completion of major-specific prerequisite coursework by the end of the spring semester of application

Successful completion of the degree and major requirements at Goucher College by the end of the spring semester of application.

Favorable recommendation letters: one each from the 3+2 Dual Degree coordinator at Goucher College, a science instructor and a math instructor.

Demonstrated proficiency in English.

Applicants who do not meet the above criteria are welcome to apply to Columbia as part of the general competitive application process, where admission is not guaranteed.

<http://undergrad.admissions.columbia.edu/apply/combined-plan>

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### **3+2 Engineering Dual Degree with Johns Hopkins University**

To apply, students should prepare a letter of introduction to send to the JHU Whiting School of Engineering. After receipt of this letter, a faculty member of Johns Hopkins will team up with a Goucher advisor to ensure that the student takes the appropriate courses at JHU during the junior year. Goucher students should typically have at least a 3.0 GPA overall, and a 3.2 GPA in the major.