Join other high school students in a challenging online program where you will learn how to apply math and science concepts to biomedical engineering projects.

What is Biomedical Engineering Innovation (BMEI)?
Designed for talented high school math and science students, Johns Hopkins Biomedical Engineering Innovation is offered online.

- Students order a program-specific lab kit and conduct hands-on engineering labs and team activities
- Learn from expert engineers and faculty
- College-level course
- Earn college credit

Learn More!
Visit us at ei.jhu.edu to apply. You will also find more information about deadlines, tuition, and fees.

Need-based financial aid is available.
About Biomedical Engineering Innovation

BMEI introduces biomedical engineering to high school students by

(1) modeling biological systems and designing experiments to test those models
(2) introducing engineering principles to solve design problems that are biological, physiological, and/or medical.

Students use the content taught in math, physics and biology and apply this knowledge to the solution of practical problems encountered in biomedical engineering.

- Introduction to modeling physiological systems, specifically the circulatory system and human efficiency
- Introduction to the design process through two design projects
- Demonstration or presentation (written or oral) of projects
- Development of an independent project including proposing a hypothesis, designing an experiment, obtaining and analyzing data, and preparing an online poster
- Three college credits earned from Johns Hopkins University

Interested students must meet the following academic requirements:

- Have As and Bs in their high school math and science classes
- Successful completion of Algebra II
- Successful completion of a course that includes trigonometric functions to determine angles and side lengths for right angle triangles
- Successful completion of a high school physics course including a lab component where hands-on experiments are completed and lab reports are written. Students need to be comfortable with drawing and calculating forces in free-body diagrams, equations of motion, and principles of electric circuits prior to taking the course.

In 2023, BMEI will be offered online during the summer semester.

June 26–August 4, 2023

Biomedical Engineering Innovation is an asynchronous course with pre-recorded lectures and real-time office hours and support. It is not a self-paced course.

Apply Now: ei.jhu.edu/apply  Questions? ei@jhu.edu