Job Description

Biomedical Engineering Innovation

Instructor

# Course Description

Biomedical Engineering Innovation (BMEI) is an online course for high school students who have an interest in learning more about engineering. Biomedical Engineering Innovation is designed to give students an opportunity to learn more about biomedical engineering, allowing them to make informed college and career decisions.

BMEI introduces biomedical engineering to high school students by (1) modeling biological systems and designing experiments to test those models and (2) introducing engineering principles to solve design problems that are biological, physiological, and/or medical. Students will model human efficiency and the cardiovascular system, design a biomedical sensor using Arduino, and complete an independent project.

# Course Dates

In 2025, BMEI will be offered June 23 to August 1. There will also be training before the course starts and wrap-up activities after the course ends. The course is mostly asynchronous with student submission deadlines every 1-2 days. Each class has at least three hours of synchronous study sessions a week. The timing of study sessions depends on the availability of the Instructor, TA(s), and students.

# Instructor Responsibilities

We are looking for Instructors who understand, appreciate, and can apply an online instructional style that emphasizes the process of problem-solving rather than memorizing material. The object is to engage students by getting them to think and participate rather than being lectured to. Students who participate in BMEI will have a broad range of experiences and abilities and will come from diverse backgrounds. The Instructor must be prepared to accommodate a multitude of learning styles and foster a sense of community within an online course platform. Finally, the Instructor must be able to engage, encourage, and excite the students.

The ideal candidate will have a PhD in an engineering discipline that is relevant to the BMEI course and experience teaching an online course at the college level. BME graduate students who have completed their first year of graduate school will also be considered. It should be noted that the BMEI class will be taught by a team comprised of an Instructor, Teaching Assistant(s), and a Grader. The Teaching Assistant(s) and Grader will be JHU undergraduates who will assist with the course.

The responsibilities of each Instructor include but are not limited to:

* Instructors must be present and available during the entire course. Instructors must login to the online course at least five of seven days per week to monitor the discussion board, retrieve assignments, answer student messages and emails, and submit assignment feedback and grades.
* Instructors must be prepared to spend time independently to review course materials and complete the online training program prior to the first day of the course.
* Instructors must be comfortable with the course material and be able to relate the curriculum to high school students.
* Instructors must conduct one-on-one design reviews with each student three times during the session.
* Instructors will be responsible for providing feedback and assigning grades for lab reports, the design projects, the final project, and for the course overall.
* Instructors must work with the TA(s) to develop a sense of community for the high school students participating in this online class.
* Instructors must provide a welcome message to all students and send mid-course messaging – especially as due dates approach for large projects.
* Instructors must be able to assist students remotely as they conduct the various lab activities and projects throughout the course.
* Instructors and TA(s) working together must respond to all student questions within 24 hours.
* Instructors must arrange for at least three study session hours each week that are hosted by one member of the team. At least one of these hours should be held by the Instructor. The study session hours should be scheduled so that all students may participate in at least one hour each week.
* Instructors must be available for supplementary instruction when requested by a student outside of the published study sessions.
* Instructors will create, as needed, additional videos to act as supplemental material to clarify/demonstrate the lab set up and/or to fill in any instructional holes that may arise.
* Instructors must ensure that students receive their graded assigned work promptly – within 1-2 days of the assignment due date – and provide detailed feedback to students so that they are able to learn from the activity and improve their future performance.
* Instructors must ensure that grades are posted to the learning management system in a timely manner.
* Instructors must ensure that child safety protocols are upheld.
* Engineering Innovation Instructors receive an academic appointment from Johns Hopkins University’s Academic Council and are subject to a pre-employment background check and fingerprinting per policies related to working with minors.
* All employees participating in Hopkins Pre-College programs must enroll and participate in mandatory online training relevant to working with minors and working at JHU.

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# Contact

Please email ei@jhu.edu to inquire about this opportunity.