香港城市大學
City University of Hong Kong

Integrating engineering and biology in a laboratory-based curriculum

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Abstract:

Stepping into the 21st century, integrating biology and technology is a global trend to improve our quality of life and business efficiency. With the growing number of biotechnology-related companies in Hong Kong, including mainly healthcare-related industries with business on pharmaceuticals, medical derives and diagnostics products, an educational platform to support this biotechnology infrastructure is a cornerstone to upgrade the biotechnology industry in Hong Kong. Inspiring by the university's vision of discovery and innovation, we have successfully established a preliminary laboratory-based curriculum for multidisciplinary studies of brain-machine interface for undergraduate students. A second phase development of the laboratory-based curriculum is imperative to enhance the learning activities for students by integrating engineering and biotechnology applications. This proposal aims to extend the development of a multidisciplinary project-based curriculum by integrating biological laboratory task components into an engineering laboratory. With this laboratory and project-based curriculum, students will be able to understand the basic working principles behind a brain-machine interface (BMI), and gain hands-on experience of designing and/or operating a BMI device.