



MMPH 6124 -- Advancements in Biomedical Engineering

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Delivery Mode: ***Face-to-Face / Zoom***

Venue: Various

Objectives: Biomedical engineering is the application of concepts and methods of physical sciences and mathematics in an engineering approach to address problems in medical sciences often, but not exclusively, concerned with modeling of biological systems or management of injuries and diseases. This course aims to introduce latest technologies pertaining to biomedical engineering and their application in basic and clinical research.

Content: Topics cover fundamental areas of engineering related to biomedical applications, including artificial intelligence (AI) in medicine, medical robotics, genetic and tissue engineering, biomechanics, biomaterials, medical instrumentation and modeling, imaging, and bioelectronics. This course also aims to introduce advanced technologies and innovations currently adopted in the research of biomedical sciences to illustrate their implications and potential.

Prerequisites: Students are expected to have university level training in physics, chemistry and mathematics. Basic understanding of biology or engineering is preferred.

Learning Outcome: 1) Understanding the principle and application of AI, bioimaging, biomechanics, biomaterials, tissue engineering and bioelectronics. 2) Being able to apply these principles and methods in biomedical research. 3) Learning the application of advance modelling and instrumentation in research settings. 4) Being able to appraise the potential and limitations of medical bioengineering. 5) Formulating a study with a multidisciplinary design.

Assessment: Attendance (50% weight); Mini Project (group project presentation) – literature review and research proposal (50% weight)

Remarks: 1) Offer opens to RPg from all Faculties in HKU.
2) A minimum of 5 students required.