



**MMPH 6124 -- Advancements in Biomedical Engineering**

Course Coordinator: Dr. Victor Leung (vicleung@hku.hk)  
Department of Orthopaedics & Traumatology  
School of Clinical Medicine

Prof. Grace Zhang (tgzhang@hku.hk)  
Department of Orthopaedics & Traumatology  
School of Clinical Medicine

Delivery Mode: ***Face-to-Face***

Venue: CPD-2.42, Centennial Campus, Central Podium Levels - Two  
(CPD-2, The Jockey Club Tower)

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 biomechanics, imaging, biomaterials, genetic and tissue engineering, medical instrumentation and modeling, 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. Some basic understanding of biology is preferred.

Learning Outcome: 1) Understanding the principle and application of biomechanics, bioimaging, biomaterials, tissue engineering and bioelectronics. 2) Being able to apply these principles and methods in biomedical research. 3) Learning the application of advance instrumentation and instruments 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.