



Medical Data Analysis (E3BME001W)

Introduction

Biomedical Engineering (BME) is an interdisciplinary field in which biology, medicine, and engineering technologies are combined and applied innovatively to solve human health problems. This workshop will first give a brief overview of BME. Then, an area of BME – Medical Data Analysis – will be introduced. Selected topics in it will also be discussed, e.g. analysis of DNA microarray data, brain signal processing, and brain-computer interface.

Remark: This workshop has 70% content the same as Biomedical Engineering Talk (Level I): Medical Data Analysis (E1BME001T). The 30% added content is mainly about the analysis of DNA microarray data, where more explanation will be given concerning feature extraction and classification steps. Students also need to carry out calculations in a classification method.

The instructor, Dr Gary Tam, has worked on research in Bioinformatics (an area belongs to BME) for about 10 years. His research mainly focused on analysis of DNA microarray data from medical experiments, topics included gene selection, tumour classification and gene regulatory network reconstruction.

Programme Type / Level

Biomedical Engineering Workshop (Level III) ([Token-required](#))

Instructor(s)

Dr Gary Tam
(Student Programme Development Officer, Academic Programme Development Division, HKAGE)

Pre-requisites

- Students are recommended to be good at scientific reasoning and mathematical calculation.
- Students need to bring their calculators to the lesson.

Target Participants

- S3 – S6 HKAGE student members only in 2020/21 school year
- Class size: 30
- *First-come, first-served

Medium of Instruction

English with English handouts

Certificate

- E-Certificate** will be awarded to participants who have:
- ❖ Attended **the sessions**; **AND**
 - ❖ Completed all the assignments with satisfactory performance.

Intended Learning Outcomes

- Upon completion of the programme, participants should be able to:
1. describe the scope and main purpose of Biomedical Engineering;
 2. understand the basic concepts of some selected topics in Medical Data Analysis;
 3. carry out calculations for tumour classification using Weighted Voting method;
 4. appreciate that Biomedical Engineering can improve human health problems.

Application Deadline **8 Feb 2021, 12:00 n.n.**

Student members may withdraw from the programme on or before the deadline. Otherwise, the token will be deducted.

Schedule

Session	Date	Time	Venue (HKAGE)
1	24 Apr	10:00 a.m. - 1:00 p.m.	Room 303

Enquiries

For enquiries, please contact Academic Programme Development Division on 3940 0101 After language selection, press "1".