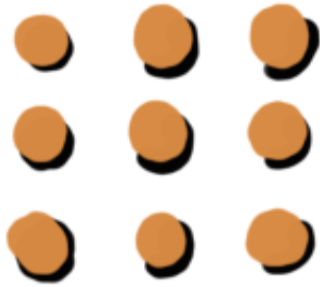


engineering

B.Eng. in Biomedical Engineering

4-year (8 semesters) full-time



Strong foundation in MATHS, engineering, computer programming and science within a focused biomedical engineering curriculum. (i.e., biomedical instrumentation, health information technology and medical science)

program structure

International collaboration with partner institutes in the USA, UK, Australia, Japan and Hong Kong.



Total 149 credits Track 1 Solely run by Faculty of Engineering KMITL

Total 162 credits Track 2 Cooperation between Dual Degree Faculty of Engineering, KMITL, and School of Computing Science, University of Glasgow (UK)

3 tracks to choose from in years 3 & 4:

- Biomedical Instrumentation (BMI)
- Health Information Technology (HIT)
- Medical Science (MS)
- Bio-Pharmaceutical

Health Information Technology (HIT)

emphasises on hospital information technology, networking in hospital, picture archive communication system (PACS), biomedical signal and image processing, and physiological modelling.

Biomedical Instrumentation (BMI)

emphasises on maintenance and calibration of medical devices, medical device administration, and medical device design and development.

Medical science (MS)

selected top-class students are qualified to pursue their studies in KMITL medical program in another 4 years. This track will educate the new generation of physicians who can conduct research in the fields of biomedical engineering.

Bio-Pharmaceutical (PHA)

semphasizes on drug delivery, drug design, drug preparation, purification and characterization. The core courses for this track also includes Pharmacokinetics and Drug Delivery, Medicinal Chemistry, Introduction to Chemical Engineering and Analytical Methods.

tuition fee

2,750 USD/semester

(21,820 USD for the entire program)

** 90,000 baht/semester (720,000 baht for the entire program)



Study plans

Semester 1

Semester 2

Year 1

Introduction to Engineering Programming
Introduction to Calculus
Physics 1
Chemistry
(GENED Elective)
Engineering Materials
Academic Listening and Speaking (Audit)

Advanced Calculus
Physics 2
Engineering Drawing
Engineering Mechanics
(GENED Elective)
Organic Chemistry
Principle of Biomedical Engineering
Academic Reading and Writing (Audit)

Year 2

(GENED Elective)
(GENED Elective)
Differential Equations and Linear Algebra
Biochemistry and Molecular Biology
Biomedical Engineering Lab 1
Measurement and Instrumentation for BME
Electrical Circuit Analysis for BME

(GENED Elective)
(GENED Elective)
Computer-Aided Designs in BME Applications
Thermodynamics
Biomedical Engineering Lab 2
Digital Electronics and Microcontroller
Physiology

Year 2

Semester 3 (Summer)

BME Elective
BME Elective
(GENED Elective)



Semester 1

Semester 2

Semester 3

Year 3 TRACK 1 COURSES HELD AT KMITL

BMI

(GENED Elective)
Biomedical Instrumentation
Biomedical Signal and System
Electromagnetics
Biomedical Electronics
Advanced Electric Circuit Analysis for BME
BME Problem-based Training Lab1
Biomedical Engineering Application

(GENED Elective)
BME Problem-based Training Lab 2
Biostatistics
Advanced Biomedical Instrumentation
Control System for BME
BME Elective
Free Elective

HIT

(GENED Elective)
Biomedical Instrumentation
Biomedical Signal and System
Fundamental of Database System
Computer Communication Networks
Android Programming in BME Application
BME Problem-based Training Lab1
Biomedical Engineering Application

(GENED Elective)
BME Problem-based Training Lab 2
Biostatistics
Principle of Healthcare Information
Technology
Fundamental of Biomedical Imaging
BME Elective
Free Elective

MS

(GENED Elective)
Biomedical Instrumentation
Body Movement and Control
Body Fluid Homeostasis 1
Body Fluid Homeostasis 2
BME Problem-based Training Lab 1
Biomedical Engineering Application

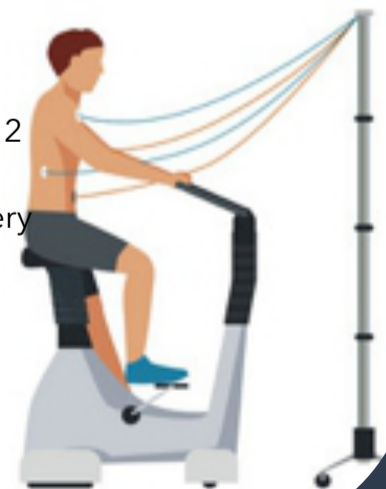
(GENED Elective)
BME Problem-based Training Lab 2
Brain and Mind
Sex, Gender, Reproduction and Healthy
Living
Human Genetics, Growth and
Development
Free Elective

PHA

(GENED Elective)
Biomedical Instrumentation
Biomedical Signal and System
Medicinal Chemistry
Introduction to Chemical Engineering and
Multidisciplinary Engineering

Organic Chemistry 2
BME Problem-based Training Lab 1
Biomedical Engineering Application

(GENED Elective)
BME Problem-based Training Lab 2
Biostatistics
Pharmacokinetics and Drug Delivery
Analytical Chemistry
BME Elective
Free Elective



Summer
(All tracks)
Industrial Training

Year 3 TRACK 2 COURSES HELD AT UNIVERSITY GLASGOW

Biological Fluid Mechanics 3
Microscopy and Optics 3
Biomechanics 3
Statistics for Biomedical Engineering 3
Simulation of Engineering Systems 3

Human Biological Sciences 2
Medical Imaging
Control 3
Instrumentation and Data Systems 3
Software Engineering M3

Biomedical engineering

Study plans

Semester 1

Semester 2

Year 4 TRACK 1 COURSES HELD AT KMITL

BMI and HIT

BME Elective
BME Elective
(GENED Elective)
Free Elective
BME Capstone Design

MS

Body Energy Homeostasis
Body Regulatory and Defense
(GENED Elective)
Free Elective
BME Capstone Design

(GENED Elective)
BME Elective
BME Elective
BME Senior Project

or

Cooperative Education
or
Study Abroad

or

BME Elective
BME Elective
BME Elective
BME Elective
(GENED Elective)
Free Elective
Free Elective

Year 4 TRACK 2 COURSES HELD AT UNIVERSITY GLASGOW

BMI and HIT

Individual Project 4/1 (Divided into 2)
Signal Processing of Biosignatures
BME Elective
BME Elective

Individual Project 4/2 (Divided into 2)
Biosensors and Diagnostics 4
Rehabilitation Engineering 4
Bioethics for BME (GENED Elective)
Counted as GENED for KMITL

Professional Practice 5 (GENED Elective)
Counted as GENED for KMITL

BME Elective

