



Department of
Biomedical Engineering
The Chinese University of Hong Kong

BEng (Hons) in Biomedical Engineering

Academic Counselling 2024

13 August 2024

Prof. Martin MAK

Associate Professor

Department of Biomedical Engineering



<http://www.bme.cuhk.edu.hk>



BMEDEPT



CUHK Biomedical Engineering



CUHK Biomedical Engineering

Biomedical Engineering ranks **global TOP 20** in 2023 subject ranking of Academic Ranking of World Universities (ARWU)



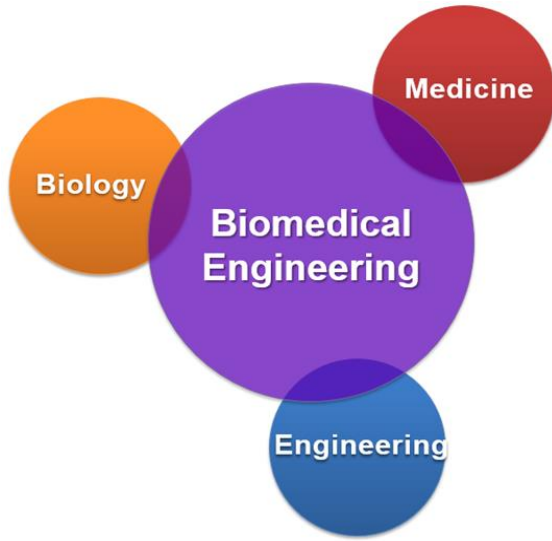
Global Ranking
20th

Hong Kong Ranking
1st

Year	2018	2019	2020	2021	2022	2023
Global Ranking	101-150	51-75	33	18	13	20
Hong Kong Ranking	3	2	2	1	1	1

<https://www.shanghairanking.com/rankings/gras/2023/RS0208>

Biomedical Engineering (BME)



CUHK-BME's Motto

EXPLORE 探索
CARE 關懷
INNOVATE 創新

- An interdisciplinary division offered by the **Faculty of Engineering** in close collaboration with the **Faculty of Medicine**
- Both basic and applied research
- Wide access to courses offered by different divisions
- Tailor-made learning programmes
- Individualized PhD candidacy examination

Academic Advisors in BME



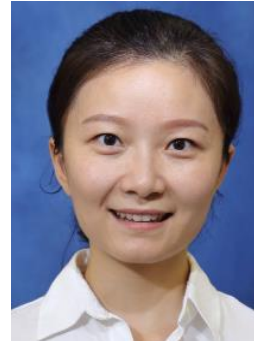
Prof. Aaron HO
Professor & Chairman



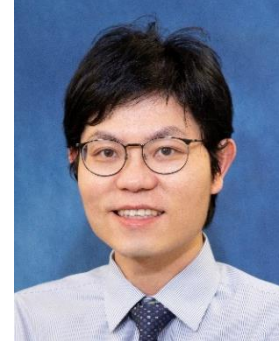
Prof. Charles CHANG
Assistant Professor



Prof. Jonathan CHOI
Professor



Prof. Liting DUAN
Assistant Professor



Prof. Zhaoli GAO
Assistant Professor



Prof. Megan HO
Associate Professor



Prof. Alan LI
Assistant Professor



Prof. Martin MAK
Associate Professor



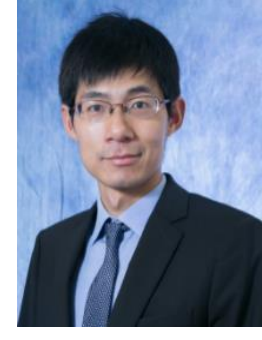
Prof. Mao Chuanbin
Professor



Prof. Raymond TONG
Professor



Prof. Scott YUAN
Assistant Professor



Prof. Renjie ZHOU
Associate Professor



Dr. Wutao LOU
Lecturer

Study Scheme

Access BME website <http://www.bme.cuhk.edu.hk/>

Click “Students” > “Undergraduate Students” > Study Scheme > **Your Admission Year**

STUDY SCHEME	
YEAR 2024-2025	Applicable to students admitted in 2024-25 - download link
YEAR 2023-2024	Applicable to students admitted in 2023-24 - download link
YEAR 2022-2023	Applicable to students admitted in 2022-23 - download link

Academic Advisor

ID:

student center

general info

academics

admissions

financial aid

Student Center

▼ Academics

[My Class Schedule](#)
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other academic... ▼

Deadlines

URL

Gradebook

This Week's Schedule

	Class	Schedule
	BMEG 2001-- LEC (4896)	Mo 1:30PM - 2:15PM Y.C. Liang Hall 103
	BMEG 2210-- LEC (7344)	We 10:30AM - 11:15AM Institute of Chin Studies L1 Tu 4:30PM - 6:15PM William M W Mong Eng Bldg 407
	BMEG 2210--T01 TUT (7377)	We 11:30AM - 12:15PM Institute of Chin Studies L1
	CHEM 1380-B LEC (7507)	Tu 1:30PM - 2:15PM Science Centre L1 Th 3:30PM - 5:15PM Science Centre L1
	CHEM 1380-BT01 TUT (7508)	Tu 2:30PM - 3:15PM Science Centre L1
	CHLT 1200-GH LEC (4181)	Th 12:30PM - 3:15PM Y.C. Liang Hall G03

SEARCH FOR CLASSES

▼ Enrollment Dates
[Open Enrollment Dates](#)

▼ Advisor
Program Advisor
Professor TONG Kai Yu
[details ▶](#)

Check CUSIS to find out
who is your academic
advisor (will be ready
in early September)

Students are advised to meet their Academic Advisor at least once per semester!

BME Curriculum Structure

University Core Requirements#	
	<u>Units</u>
Chinese Language	5
English Language	8
University GE	7
College GE	6
Foundation GE Courses	6
Understanding China	1
Hong Kong in the Wider Constitutional Order	1
IT	3
PE	2
Total:	39

Major Programme Requirements	
	<u>Units</u>
Faculty Package	9
Foundation Courses	12
Major Required Courses	33
Research Component Courses	6
Major Elective Courses	15
Total:	75

Free Electives: 9

Minimum Units for Graduation: **123**

For details of University Core, please visit: <http://www.res.cuhk.edu.hk/en-gb/undergraduate-students/information-for-year-1-students/information-on-university-core-requirements-and-exemption>

Student Handbook: http://rgsntl.rgs.cuhk.edu.hk/aqs_prd_applx

Recommended Study Scheme: Year 1

	Units	Pre-assigned
<u>Year 1 - Term 1</u>		
• BMEG2001 Introduction to Biomedical Engineering	1	✓
• CHEM1280 Intro to Org Chm & Biomolecule/ CHEM1380 Basic Chemistry for Engineers/ LSCI1001 Basic Concepts in Biological Sciences/ LSCI1002 Introduction to Biological Sciences*	0-3	
• MATH1510 Calculus for Engineers	3	✓
• PHYS1110 Engineering Physics: Mechanics and Thermodynamics	3	✓
• SBMS1431 Human Anatomy and Physiology I	2	✓
<u>Year 1 - Term 2</u>		
• ENGG1120 Linear Algebra for Engineers	3	✓
• ENGG1130 Multivariable Calculus for Engineers	3	✓
• CHEM1280/ CHEM1380/ LSCI1001/ LSCI1002* (if not taken in Term 1 and depends on the course offering term)	0-3 2	✓
• SBMS1432 Human Anatomy and Physiology II		
<u>Year 1 - Summer (4 weeks)</u>		
• BMEG2602 Hospital Experience and Engineering Practicum (Summer Practical Training) (*please reserve your time & take it in year-1 summer!!!)	1	✓

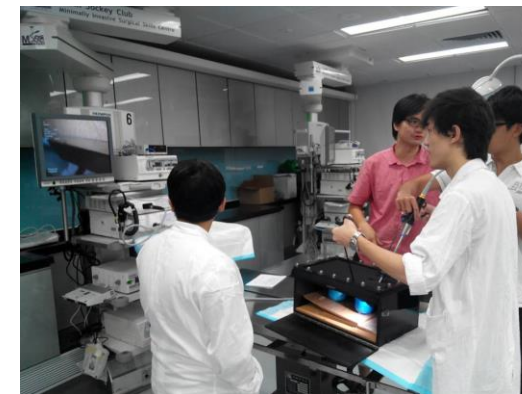
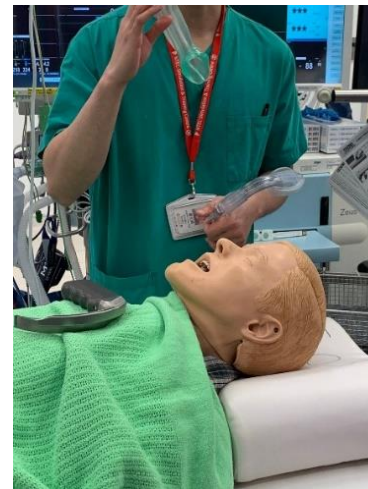
For Year 1 students, all required courses will be pre-assigned to you except CHEM & LSCI* courses (unless there is time clash due to re-take of foundation courses)

*Students who would like to select LSCI1002 to fulfill the major requirement are recommended to take the course in their Year 1 or Year 3 as the course would be clashed with SBMS1440 in Year 2 study. Students should approach BME General Office for the course enrollment before the course registration period.

BME Practical Training

BMEG2602 Hospital Experience and Engineering Practicum (Year 1 Summer)

- Four-week professional and practical summer training on CUHK main campus and at Prince of Wales Hospital (PWH) and CUHK Medical Centre (CUMC) for Year 1 students
- **In-house Training involves:**
Electronic Circuit Design, Simulation, Fabrication, Interfacing with Software, Data Acquisition and Wireless Communication, etc.
- **Hospital Training involves:**
 - Daily operation, information flow and logistics in the clinic
 - Fundamentals and basic operation of medical instruments



Recommended Study Scheme: Year 2

	Units	Pre-assigned
<u>Year 2 - Term 1</u>		
• ENGG1110 Problem Solving By Programming	3	✓
• BMEG2210 Orthopaedic Biomechanics and Musculoskeletal Injury	3	✓
• BMEG2410 Complex Analysis and Differential Equations	3	✓
<u>Year 2 - Term 2</u>		
• BMEG2012 Biomedical Engineering Laboratory	2	✓
• BMEG2300 Circuits and Signals for Biomedical Engineering	3	✓
• ENGG1310 Engineering Physics: Electromagnetics, Optics and Modern Physics	3	✓
	2	✓
• SBMS1440 Cell and Molecular Biology in Biomedical Engineering	3	✓
• STAT3210 Statistical Techniques in Life Sciences		

For Year 2 students, all required courses will be pre-assigned to you (unless there is time clash due to re-take of foundation courses)

Recommended Study Scheme: Years 3-4

	Units	Pre-assigned
<u>Year 3 - Term 1</u> Major required: (1) BMEG3430 Biomaterials and Tissue Engineering (2) BMEG3111 Medical Instrumentation and Design (3) BMEG3320 Biomedical Imaging Major Elective: 1 course	8 3	
<u>Year 3 - Term 2</u> Major required: BMEG4010 Global Medical Device Regulatory Affairs Major Elective: 2 courses	3 6	
Year 4: Work-Study for students who want to receive industrial training Note: Students who have completed a structured training programme are qualify for consideration of ENGG1820 Engineering Internship (1 unit)		
<u>Year 4 - Term 1 (or Year 5 for work-study)</u> Major required: BMEG4998 Final Year Project I Major Elective: 1 course	3 3	✓
<u>Year 4 - Term 2</u> Major required: BMEG4999 Final Year Project II Major Elective: 1 course	3 3	✓

Please discuss with your Academic Advisor if necessary

Stream Specialization

Students may choose not to specialize in any stream or to specialize in one of the three streams and complete a minimum of 12 units of courses, at most one elective at 2000 or below level, plus BMEG4998 and 4999[e], prescribed by the stream

Medical Instrumentation & Biosensors (MIB)

BMEG3103 Big Data in HealthCare	BMEG3130 TeleMedicine & Mobile Healthcare	BMEG3210 Biofluids
BMEG3330 Neuroengineering	BMEG3420 Medical Robotics	BMEG3440 Global Engineering Medical Innovation
BMEG4220 Wearable Biomedical Devices and IoT in Healthcare	BMEG4410 BioMEMS	BMEG4450- Bionanotechnology
BMEG4520 Cardiovascular Engineering	ELEG3201 Microelectronic Devices and Circuits	CSCI course(s) * Students are allowed to take a maximum of 3 units of CSCI course(s) at 1000 or above level

Biomedical Imaging, Informatics & Modeling (MII)

BMEG3102 Bioinformatics	BMEG3103 Big Data in HealthCare	BMEG 3105 Data Analytics for Personalized Genomics and Precision Medicine
BMEG3440 Global Engineering Medical Innovation	BMEG4220 Wearable Biomedical Devices and IoT in Healthcare	BMEG4320 AI & Imaging for Biomedical Engineering
BMEG4520 Cardiovascular Engineering	CSCI course(s) * Students are allowed to take a maximum of 3 units of CSCI course(s) at 1000 or above level	

Molecular, Cell & Tissue Engineering (BCTE)

BMEG3105 Data Analytics for Personalized Genomics and Precision Medicine	BMEG3140 Molecular and Cellular Engineering Laboratory	BMEG3210 Biofluids
BMEG3440 Global Engineering Medical Innovation	BMEG4410 BioMEMS	BMEG4450 Bionanotechnology
BMEG4510 Biomolecular Engineering	BMEG4520 Cardiovascular Engineering	BMEG4530 Musculoskeletal Tissue Engineering
MBTE4320 Genetic Engineering	CSCI course(s) * Students are allowed to take a maximum of 3 units of CSCI course(s) at 1000 or above level	

Course Registration - CUSIS

- Register your courses through CUSIS during your allotted timeslot on 28 August 2024 (*10:00 am - 10:00 pm)
- For details on University Core, please visit the RES website:
<http://www.res.cuhk.edu.hk/en-gb/undergraduate-students/information-for-year-1-students/information-on-university-core-requirements-and-exemption/university-core-requirements-for-year-1-students>

** Login time is from 10:00 a.m. for new students admitted with Advanced Standing or admitted to senior-year places and those admitted to Medical Year 2 or above. Other students' login time is from 11:00 a.m.*

Add/Drop Courses

Date / Time	Add/Drop
9 September 2024 (8:30 pm) - 15 September 2024 (8:30 pm)	CUSIS e-Add/Drop

- You are strongly advised to plan and select courses very carefully
- You should give priority to **Pre-assigned** courses
- *Minimum* no. of units in a term: 9
- *Maximum* no. of units in a term: 18
- Maximum no. of units in *summer term*: 6
- Maximum no. of units in an academic year: 39 (*summer courses included*)

Note:

First-year students (excluding senior-year entrants) are allowed to take up to 19 units in each term (Term 1 & 2 2024-25). The maximum no. of units in an academic year will remain 39.

Double Degree Option

ERG-BBA

- 1st degree: Bachelor of Engineering (Biomedical Engineering)
 - 2nd degree: Bachelor of Business Administration (Integrated BBA Programme)
 - Collaborated with the Faculty of Business Administration
-
- *Subject to the approval of the two Faculties/Programs concerned*
 - *Must complete at least 30 units of Integrated BBA Programme courses within the normative / minimum study period of 1st degree*
 - *For further information, please refer to the Faculty website at <http://www.erg.cuhk.edu.hk/erg/ergbba>*

Minor Programmes

- Students can take up to two minor programmes
- 18-30 units for each minor programme

For details, please refer to the section "Requirements of Major Programmes and Minor Programmes" under the 4-year normative curriculum of the [Undergraduate Student Handbook](#).

BME Outstanding Achievement Scholarships

Number of Awards

EIGHT awards, \$10,000 each

Open to students for application in every academic year!
(at the end of the 2nd semester, around June every year)

Eligibility and Award Criteria

- Year 1 to Year 4 or above BME undergraduate students
- Year GPA of 3.0 or above in the previous year of study
- Participated in co-curricular and/or extra-curricular activities:
 - ✓ Awards, especially those related to BME discipline
 - ✓ Community Service, e.g. contribution to BME Department and/or Profession
 - ✓ Other achievement, e.g. sports, competitions, voluntary work
- Financial needs



BME Outstanding Achievement Scholarships

Award Presentation

Name	Year of Study in 2023-24
NG Sui Ip	1
TSANG Tsz Wai	1
ZHANG Laibohan	1
LEE Ho Lam	2
LI Zijing	2
MAN Kit Chiu	2
HO Yu On	3
KANNAPPAN Kannammai	3
KWOK Long Ching (Honorary Award)	4

BME Internships Opportunities

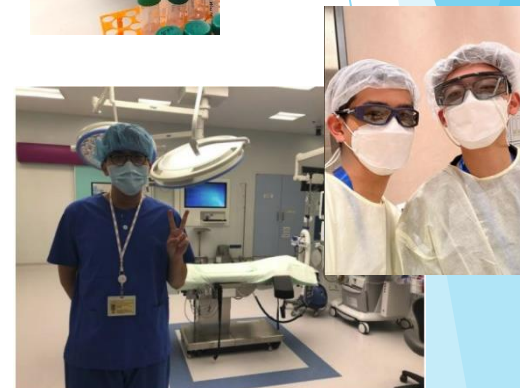
In the last two academic years (2022-2024), our senior-year students joined local and overseas internship programmes and work-study

Overseas Summer Research Internship (past opportunities)

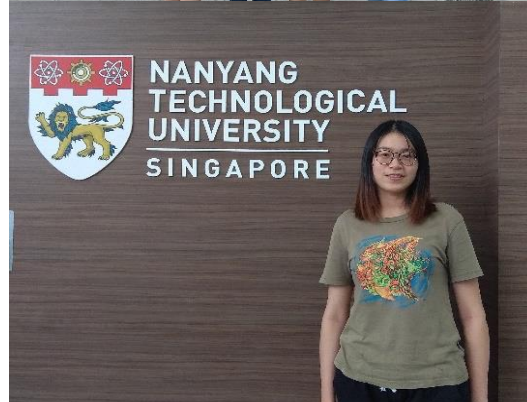
Hosting Institution	
Columbia University, US	Imperial College, UK
Michigan State University, US	University of Toronto, Canada
Northwestern University, US	University of Sydney, Australia
University of Pennsylvania, US	Korea Institute of Science & Technology, South Korea
University of Pittsburgh, US	National University of Singapore, Singapore
University of California, US	Nanyang Technological University, Singapore
University of California at San Diego, US	Technika University of Gdańsk, Poland
University of California at Irvine, US	Chang Gung University, Taiwan
University of Illinois at Urbana-Champaign, US	National Taiwan University, Taiwan
Stanford University, US	National Tsing Hua University, Taiwan
New Jersey Institute of Technology, US	French National Centre for Scientific Research (CNRS), Troyes, France
Tsinghua University, Beijing, China	

Other past summer BME internship opportunities include:

- **Public sector:** HKPC, EMSD
- **Medical sector:** HA, local private hospitals (e.g. Hong Kong Adventist Hospital-Tsuen Wan & Stubbs Road, Gleneagles Hospital, St. Paul Hospital etc.), Johnson & Johnson Medical Devices, Stryker, Celki Medical etc.
- **Academic sector:** CAS SIAT, HKSTP, Professors' lab



Overseas Exchange



Recent BME Activities

Townhall Meeting



Alumni Sharing



MRC Lab Visit



Annual Spring Dinner



Where do our BME graduates go?

- Manufacturing Industries
- Clinical Engineers in Hospitals
- Entrepreneurs in Biotech Companies
- Regulatory Affairs
- Distribution & Sale
- Testing Laboratories
- Research Scientists & Engineers
- Further Studies (MSc, PhD, MD, MBA, PCLL)



BME Graduates Career Pathways (2021-2023)

Engineering/ Product Support

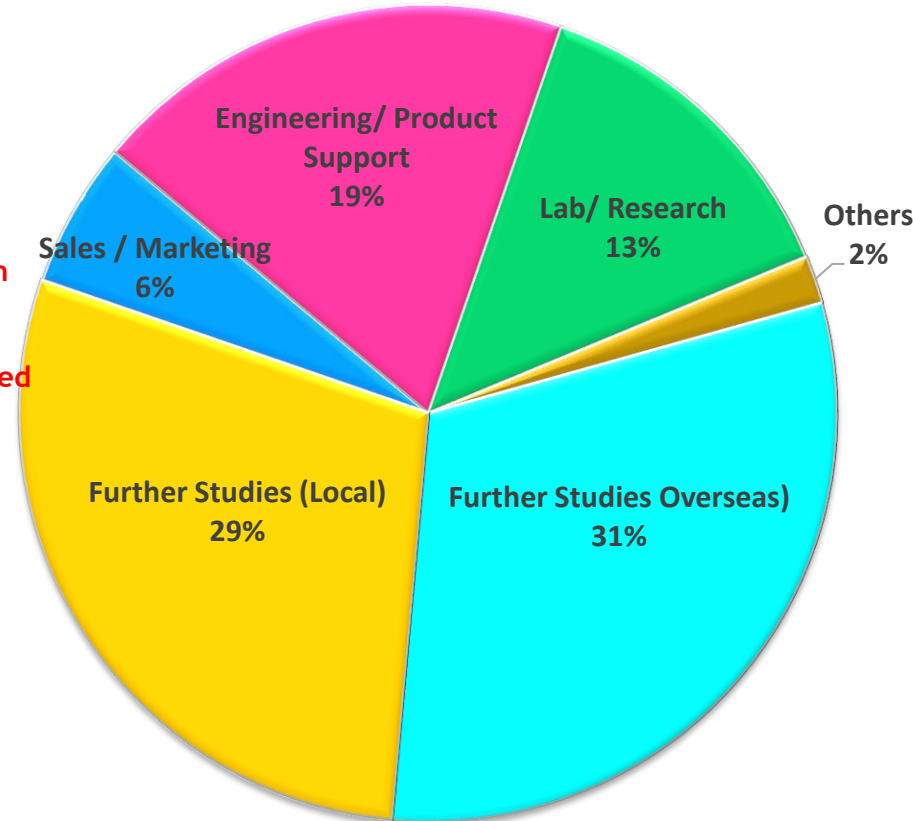
- Electrical and Mechanical Services Department
- Celki Vitaleire
- Most Glory Trading Limited
- Getinge Group HK
- Roche Diagnostic
- Eppendorf China Limited
- Sanwa Biotech
- Hong Kong Adventist Hospital - Tsuen Wan
- Morning Bright Engineering Co., Ltd
- PhoMedics
- Olympus Corporation of Asia Pacific Limited

Sales/ Marketing

- Johnson & Johnson
- Philips
- Siemens
- Ultronics Enterprise Limited

Further Studies (Local)

- The Chinese University of Hong Kong
- The Education University of Hong Kong
- The Hong Kong University of Science and Technology
- The Hong Kong Polytechnic University



Lab/ Research

- The Chinese University of Hong Kong
- The Hong Kong Polytechnic University
- City University of Hong Kong
- Center for Neuromusculoskeletal Restorative Medicine (CNRM)
- Hong Kong Centre for Neurodegenerative Disease Limited

Others

- HKFYG (Creative Education Unit)

Further Studies (Overseas)

- Auckland University of Technology
- Seoul National University
- University of Toronto
- National University of Singapore
- Imperial College London
- University of Nottingham
- Northwestern University
- Johns Hopkins University
- The University of Edinburgh
- Doshisha University

University General Regulations (10.0)

Academic Probation and Discontinuation of Studies

10.1 A student shall be put on academic probation if s/he has obtained a grade point average below 1.5 in the preceding term, unless Regulation 10.4 applies.

10.2 Notwithstanding Regulation 10.1, a student who has obtained a grade point average below 1.0 in a term or who has failed in more than half of the units of courses taken in a term shall be required to discontinue studies in accordance with Regulation 10.4(c), unless s/he has submitted an application in writing to continue studies, and such application has been approved by the Major Programme concerned.

10.3 A student on academic probation shall be required to take a reduced load as prescribed in Regulation 5.2. His/Her performance shall be reviewed at the end of the term in which s/he is put on probation, at which time if s/he has obtained a grade point average of 1.5 or above, probation shall be lifted, otherwise probation shall continue to apply in the next term of attendance unless s/he is required to discontinue studies as prescribed by Regulation 10.4 or s/he has completed all graduation requirements as set out in Regulation 12.1.

10.4 A student shall be required to discontinue studies at the University:

- (a) if his/her grade point average in a term is below 1.0 for two consecutive terms of attendance; or
- (b) if s/he fails in more than half of the units of courses taken in a term for two consecutive terms of attendance; or
- (c) if s/he obtains a grade point average below 1.0 or fails in more than half of the units of courses taken in a term, unless permission to continue studies from the Major Programme concerned is obtained; or
- (d) if s/he still fails to have probation lifted after s/he has been put on academic probation for two consecutive terms of attendance; or
- (e) if, after two attempts, s/he still fails to meet the minimum grade required for specified courses or pass the relevant examinations (if any) as prescribed by his/her Major Programme, unless otherwise decided by the Board of the Faculty to which s/he belongs or s/he is successful in obtaining transfer to another Major Programme in the next term of attendance; or
- (f) if s/he fails to fulfil all requirements for graduation within the years specified in Regulation 3.0 and detailed in the Annex.

10.5 With the exception of Regulation 10.4(e), regulations on academic probation and discontinuation of studies shall not apply to students taking courses in summer sessions.

Important Regulations

Study Period

Normative study period: 4 years

Maximum study period: 6 years

(including any periods of leave of absence and suspension of studies, but excluding any periods of compulsory military service)

Change of Study Period

Participating in approved exchange programs and internship schemes will be allowed

UG Student Handbook: http://rgsntl.rgs.cuhk.edu.hk/aqs_prd_applx

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All important messages will be sent to your CUHK email account.

Please check your CUHK email account regularly!

When emailing your academic advisor, course instructors or major programme administration, be professional, courteous and clear.

Your email should include the following details:

- A subject line to state the purpose of your email
- Your full name
- Student ID
- Course code and name
- Other main information as appropriate

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<http://www.bme.cuhk.edu.hk>



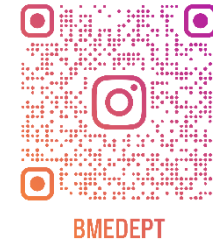
[bmedept](https://www.instagram.com/bmedept)



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208 posts 890 followers 154 following

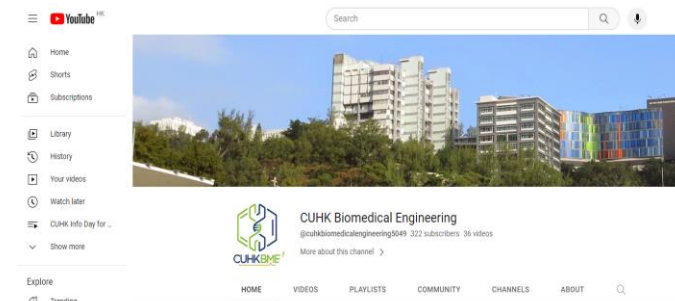
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[CUHK Biomedical Engineering](https://www.youtube.com/CUHKBiomedicalEngineering)



BME Student Ambassadors 2024-25

Name	Admission Channel	Year of Study	Gender	Contact
KANNAPPAN Kannammai	Non-JUPAS Local	Year 4	F	1155163190@link.cuhk.edu.hk
HUQ Mohammad Tahmid Ul	International	Year 4	M	1155165056@link.cuhk.edu.hk
LEE Tsz Yeung	JUPAS	Year 3	M	1155193424@link.cuhk.edu.hk
LI Wai Kwan Tommy	JUPAS	Year 3	M	1155194369@link.cuhk.edu.hk
Michelle LEE	International	Year 3	F	1155179462@link.cuhk.edu.hk

BME is recruiting Student Ambassadors in 2024-25. The full list of BME Student Ambassadors will be released around early-September 2024.



Kannammai



Tahmid



Tsz Yeung



Tommy



Michelle

CUHK BME Cabinet - 珀醫琉漪 Lyngurium



CUHK BME - Alumni Association





Q & A