BACHELOR OF ENGINEERING IN

Biomedical Engineering

Student Handbook (2021-22)

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August 2021

1. AIMS OF MAJOR

This major aims to pursue excellence in education, research, and innovation through the fusion of engineering with life sciences for the advancements of human health. The objectives of the major are to provide integrative educational opportunities that allow students to learn passionately how to think critically and independently, and innovate creatively so that they can be well prepared for the following:

1. be able to apply their skills to a variety of challenges in their chosen field.
2. be equipped with spirits of innovation, creativity, adaptability, and critical thinking to solve problems in the biomedical engineering related professions.
3. to function effectively in multidisciplinary team environments and communicate to a variety of audiences.
4. to demonstrate competency in their chosen fields, and make decisions that are socially and ethically responsible.
5. to build and expand upon their undergraduate foundations by engaging in learning opportunities throughout their careers.

Intended Learning Outcomes of Major (MILOs)

Upon successful completion of this major, students should be able to acquire:

No.	*MILOs*	*Discovery-enriched curriculum related learning outcomes (please tick where appropriate)*		
		A1	*A2*	*A3*
1.	Ability to master required knowledge of mathematics, science, and engineering and apply them appropriately to solve problems at the interface of engineering and life science.		√	√
2.	Ability to design a system, component or process to meet desired needs within realistic constraints, and to develop innovative technologies to serve healthcare-related needs of the society.	√	√	
3.	Ability to integrate problem solving capability with interpersonal skills and effectively work in a team.	√	√	√
4.	Ability to develop a broad technical and social outlook in biomedical engineering discipline, and to develop the right working attitude and professional spirit.		√	
5.	Ability to engage in lifelong learning to stay abreast of contemporary issues, and to pursue and undertake continuous professional and career development.	√	√	

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishments of discovery/innovation/creativity through producing/constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Graduates of this Major will have the following attributes:

1. an ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline;
2. an ability to design and conduct experiments, as well as to analyse and interpret data;
3. an ability to design a system, component or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability;
4. an ability to function on multi-disciplinary teams;
5. an ability to identify, formulate and solve engineering problems;
6. an ability to understand professional and ethical responsibility;
7. an ability to communicate effectively;
8. an ability to understand the impact of engineering solutions in a global and societal context, especially the importance of health, safety and environmental considerations to both workers and the general public;
9. an ability to stay abreast of contemporary issues;
10. an ability to recognize the need for, and to engage in life-long learning;
11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline;
12. an ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations.

2. DEGREE REQUIREMENTS

2.1 Normal and Maximum Period of Study

	Normative 4-year Degree	Advanced Standing I (Note 1)	Advanced Standing II (Senior-year Entry) (Note 2)
Normal period of study	4 years	3 years	2 years
Maximum period of study	8 years	6 years	5 years

Note 1: For students with recognised Advanced Level Examination or equivalent qualifications.
Note 2: For Associate Degree/Higher Diploma graduates admitted as senior-year intake students.

2.2 Minimum Number of Credit Units Required for the Award and Maximum Number of Credit Units Permitted

Degree Requirements	Normative 4-year Degree	Advanced Standing I	Advanced Standing II (Senior-year Entry)
Gateway Education requirement *	30 credit units	21 credit units	12 credit units
College/School requirement *	6 credit units	waived	waived
Major requirement	81 credit units (Core: 69 Elective: 12)	72 or 75 credit units+^ (Core:66 or 69^ Elective: 6)	66 credit units+ (Core: 63 Elective: 3)
Free electives / Minor (if applicable)	3 credit units	0 credit unit	0 credit unit
Minimum number of credit units required for the award	**120 credit units**	**93 or 96 credit units^**	**78 credit units**
Maximum number of credit units permitted	**144 credit units**	**114 credit units**	**84 credit units**

***** *For details, please refer to the Curriculum Information Record for Common Requirements.*

+ Course exemptions granted to individual students should be made up within electives in the Major Requirement.

^ Up to 3 credit units of core courses are to be waived for students admitted with Advanced Standing I.

Students under the Undergraduate plus Taught Postgraduate Degree Programme may take a 3-credit unit Master's level course from the MSBME programme curriculum as a free elective to make up for the minimum number of credit units required for the award. Up to a maximum of 9 credit units of MSc courses can be used to fulfill the MSc degree requirements.

2.3 Gateway Education

(The catalogue term of the Gateway Education requirement that students will follow will be the same as their admission term.)

Curriculum Catalogue Term	**Semester A 2016/17 onwards**		
	Normative 4-year Degree	**Advanced Standing I** (Note 1)	**Advanced Standing II (Senior-year Entry)** (Note 2)
University requirements			
English			
• GE1401 University English	3 credit units	3 credit units	Not a compulsory requirement
• Discipline-specific English: GE2410 English for Engineering	3 credit units	3 credit units	3 credit units
GE1501 Chinese Civilisation – History and Philosophy	3 credit units	3 credit units	Not a compulsory requirement
Distributional requirements Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	12 credit units *(At least one course from each of the three areas)*	6 credit units *(From two different areas)*	3 credit units
College/School-specified courses ^	9 credit units	6 credit units	6 credit units
Total	**30 credit units**	**21 credit units**	**12 credit units**

Note 1: For students with recognised Advanced Level Examination or equivalent qualifications.
Note 2: For Associate Degree/Higher Diploma graduates admitted to the senior year.

^ College/School-specified courses for fulfilling the Gateway Education requirement

Course Code	**Course Title**	**Level**	**Credit Units**	**Remarks**
Normative 4-year Degree				
MA1200/ MA1300	Calculus and Basic Linear Algebra I/ Enhanced Calculus and Linear Algebra I	B1	3	
MA1201/ MA1301	Calculus and Basic Linear Algebra II/ Enhanced Calculus and Linear Algebra II	B1	3	
BME2066	Professional Engineering Practice	B2	3	
Advanced Standing I (for BME)				
MA1201	Calculus and Basic Linear Algebra II	B1	3	Students may also be required to take MA1200 as a prerequisite subject to the result of the MA placement test.
BME2066	Professional Engineering Practice	B2	3	
Advanced Standing II (Senior-year Entry)				
BME2066	Professional Engineering Practice	B2	3	
Take any courses not within the Major requirements (including Core Courses and Electives)				

2.4 English Language Requirement

Normative 4-year degree students and Advanced Standing I students who passed the 6 credit units of specified GE English courses, and Advanced Standing II students who passed the 3 credit units of discipline-specific GE English course are recognized as fulfilling the University's English Language Requirement.

Students scoring below Level 4 in HKDSE English Language or Grade D in HKALE AS-level Use of English or students who do not possess an equivalent qualification are required to complete two 3-credit unit courses, LC0200A English for Academic Purposes 1 and LC0200B English for Academic Purposes 2, prior to taking the GE English courses. Students who demonstrate that they have achieved a grade B or above in their overall course results for LC0200A will achieve 3 credits and also be considered to have satisfied the pre-requisite for entry to the GE English courses without needing to take LC0200B. The credit units of LC0200A and LC0200B will not be counted towards the minimum credit units required for graduation and will not be included in the calculation of the cumulative grade point average (CGPA). However, they will be counted towards the maximum credit units permitted.

2.5 Chinese Language Requirement

Students scoring below Level 4 in HKDSE Chinese Language, or below Grade D in HKALE AS-level Chinese Language and Culture will be required to complete a 3-credit unit course CHIN1001 University Chinese I. The 3 credit units will not be counted towards the minimum credit units required for graduation and will not be included in the calculation of the cumulative grade point average (CGPA). However, they will be counted towards the maximum credit units permitted.

In addition to the above requirement, Colleges/Schools also have the discretion to specify other Chinese language courses for their students, including students who do not possess the above qualifications (Senate/70/MM27-28 refers). Please indicate if there are such requirements.

2.6 College/School Requirement, if any

(The catalogue term of the College/School requirement that students will follow will be the same as their admission term.)

Course Code	Course Title	Level	Credit Units	Remarks
Normative 4-year Degree (6 credit units)				
*Choose **two** from the following three subject areas:*				
Physics				
PHY1201	General Physics I	B1	3	
Chemistry				
CHEM1300	Principles of General Chemistry	B1	3	
Biology				
CHEM1200	Discovery in Biology	B1	3	
Advanced Standing I (0 credit unit)				
College Requirement waived.				
Advanced Standing II (Senior-year Entry) (0 credit unit)				
College Requirement waived.				

2.7 Major Requirement (81 credit units)

2.7.1 Core Courses (69 credit units)

- **Advanced Standing I students: 66 or 69 credit units^**
- **Advanced Standing II students: 63 credit units§**

Course Code	Course Title	Level	Credit Units	Remarks
CHEM1200 Or CHEM1300 Or PHY1201	Discovery in Biology Or Principles of General Chemistry Or General Physics I	B1	3	The remaining engineering course from CHEM1200, CHEM1300 and PHY1201 which has not been taken to fulfil the College Requirement should be taken for normative 4-year degree students. Students admitted with Advanced Standing will be advised to take one of the Engineering courses based on their academic background if the course is not waived.
CS1302	Introduction to Computer Programming	B1	3	
BMS2801	Molecules and Cells	B2	3	
BME2029	Electrical and Electronic Principles	B2	3	
BME2036	Engineering Computing	B2	3	
BME2102	Introduction to Biomechanics	B2	3	
BME2103	Medical Biotechnology in Imaging and Measurement	B2	3	
BME2104	Tissue Engineering	B2	3	
BME2105	Introduction to Biomedical Engineering	B2	3	
BME2121	Artificial Intelligence in Biomedical Engineering	B2	3	
BME2122	Biological Thermofluids	B2	3	
MA2177	Engineering Mathematics and Statistics	B2	3	
BME3102	Human Quantitative Physiology	B3	3	
BME3103	Bio-sensors and Bio-devices	B3	3	
BME3104	Health Maintenance and Wellness Technology	B3	3	
BME3121	Biomedical Signals and Systems	B3	3	
BME3123	Materials for Biomedical Engineering	B3	3	
BME4101	Biomedical Instrumentation	B4	3	
BME4102	Final Year Project	B4	9	
BME4103	Bio-safety and Security	B4	3	
CS4465	Computational Biology and Bioinformatics	B4	3	

^ ***Up to 3 credit units of core courses are to be waived for students admitted with Advanced Standing I from the B1 and B2 level courses: CHEM1200/CHEM1300/PHY1201, CS1302, BMS2801, BME2029, BME2036, BME2102, BME2103, BME2104, BME2105, BME2121, BME2122 and MA2177 based on the academic background of students.***

§ ***6 credit units of core courses are to be waived for students admitted with Advanced Standing II from the B1 and B2 level courses: CHEM1200/CHEM1300/PHY1201, CS1302, BMS2801, BME2029, BME2036, BME2102, BME2103, BME2104, BME2105, BME2121, BME2122 and MA2177 based on the academic background of students.***

2.7.2 Electives (12 credit units)

- **Normative 4-year degree students are required to earn at least 6 credit units at B3 and/ or B4 levels from Table 1 Bachelor's Level Electives.**

- **Advanced Standing I students are required to complete at least 6 credit units with a minimum of 3 credit units at B3 and/or B4 levels from Table 1 Bachelor's Level Electives, in addition to credit units required to make up for exempted core courses.**

- **Advanced Standing II students are required to complete at least 3 credit units from Table 1 Bachelor's Level Electives, in addition to credit units required to make up for exempted core courses.**

- **Students under the Undergraduate plus Taught Postgraduate Programme are required to complete at least 6 credit units at B3 level or above from Table 1 Bachelor's Level Electives and/or Table 2 Master's Level Electives from the MSBME programme curriculum. A maximum of 9 credit units of courses (including major electives and free electives) at P5 and/or P6 level(s) from Table 2 can be used to fulfil the MSc degree requirements.**

Table 1 Bachelor's Level Electives

Course Code	Course Title	Level	Credit Units	Remarks
CHEM2013	Microbiology	B2	3	
EE2104	Introduction to Electromagnetics	B2	3	
FS2001	Workshop-based Study in Science and Engineering	B2	3	
MNE2020	Engineering Workshop Practice	B2	0	
BME3016	Biomedical Engineering CAD	B3	3	
BME3101	Micro and Nanotechnology for Biomedical Engineering	B3	3	
BME3105	Biomedical Systems and Control	B3	3	
BME3122	Fundamental Gene Therapy	B3	3	
BMS3101	Cell Transport and Signalling	B3	3	
BME4006	Consumer Mechatronics	B4	3	
BME4032	Robotics and Machine Vision	B4	3	
BME4047	Directed Studies	B4	3	
BME4104	Technology for Drug Discovery	B4	3	
BMS4102	Technology for Regenerative Medicine	B4	3	
PHY4232	Radiotherapy Physics	B4	3	
PHY4274	Radiation Biophysics	B4	3	
PHY4275	Radiological Physics and Dosimetry	B4	3	

Table 2 Master's Level Electives
(for students under the Undergraduate plus Taught Postgraduate Degree Programme only)

Course Code	Course Title	Level	Credit Units	Remarks
BME6005	Micro Systems Technology	P6	3	
BME6101	Manufacturing of Biomedical Devices	P6	3	
BME6111	Biomedical Instrumentation	P6	3	
BME6117	Biomedical Safety and Risk Assessment	P6	3	
BME6121	Biomechanics	P6	3	
Any electives listed in the MSBME programme curriculum.				

2.8. Optional Courses

Course Code	Course Title	Level	Credit Units	Remarks
FS4001	Co-operative Education Scheme (CES)	B4	8	Internship (8 to 12 months)
FS4002	Industrial Attachment Scheme (IAS)	B4	3	Internship (Minimum 6 weeks)
FS4005	Overseas Internship Scheme (OIS)	B4	3	Summer Overseas Internship

3. ACADEMIC REGULATIONS AND GUIDELINES

Students should observe the University's academic regulations and guidelines at all times. More information can be available by referring to the following website maintained by the Academic Regulations and Records Office (ARRO).

ARRO Homepage: *http://www.cityu.edu.hk/arro*

4. ACADEMIC AWARDS

For students who are on programmes of (i) Normative 4-Year Degree admitted from 2020/21 and thereafter, (ii) Advanced Standing I admitted from 2021/22 and thereafter, and (iii) Advanced Standing II admitted from 2022/23 and thereafter, award with distinctions will be conferred (based on the CGPA ranking) upon the top 15% students in the respective departments/ schools graduating in the same semester/term as follows:

Award with Distinctions	Awarded to Graduates Ranked in
summa cum laude	top 2%
magna cum laude	next 5%
cum laude	next 8%

5. ACADEMIC HONESTY

Academic honesty is central to the conduct of academic work. Students are expected to present their own work, give proper acknowledgement of other's work, and honestly report findings obtained. As part of the University's efforts to educate students about academic honesty, all students are required to complete the Online Tutorial and Quiz on Academic Honesty, and make a Declaration by **30 November 2021** on their understanding of academic honesty.

For details, please refer to Office of the Provost's website:
http://www.cityu.edu.hk/provost/academic_honesty/university_requirment_on_academic_honesty.htm

6. COMMUNICATIONS

Listed below are the normal channels of communication between students and courses / major / department:

a) Students having difficulties in a course of study should first talk to the course teacher concerned.

b) A student who wishes to discuss the overall organization of the major should speak to the Major Leader.

c) A student who wishes to discuss issues on a particular part of the major should speak to the relevant Year Tutor.

d) The major's Joint Staff & Student Consultative Committee helps to facilitate consultation and communication. A student from each entry cohort will be elected to sit in the Committee.

e) In addition, a student from each entry cohort will be elected to sit in the Major Programme Committee which meets every semester to discuss major-related matters.

f) Students are expected to have at least two meetings per semester with their respective academic advisors, one for course selection and another for review of university life. Other than the meetings, students should keep in contact with their respective academic advisors regularly (e.g. via emails or other means). Students should feel free to approach their respective academic advisors for advice regarding their study plan or personal and career development.

7. MAJOR LEADER AND YEAR TUTORS

Position	Staff Name	Tel/Email
Major Leader:	Dr. Cecil T. H. CHEN	3442-4114 / thchen@cityu.edu.hk
Deputy Major Leader:	Dr. Kannie W. Y. CHAN	3442-9141 / kanniew.y.c@cityu.edu.hk
Year Tutors (By Cohort and Programme Code):		
2018 BENGEGU4 & 2019 BENGEGU3/ASI	Dr. Lu LIU	3442-5426 / luliu45@cityu.edu.hk
2019 BENGEGU4 & 2020 BENGEGU3/ASI	Dr. Xinge YU	3442-9525 / xingeyu@cityu.edu.hk
2020 BENGEGU4	Dr. Chia-Hung CHEN	3442-9547 / chiachen@cityu.edu.hk
2021 BENGEGU4 & 2022 BENGEGU3/ASI	Dr. Lu LIU	3442-5426 / luliu45@cityu.edu.hk

8. INFORMATION FOR NEW STUDENTS

8.1 How to access your Personal Class Schedule

i) Go to CityU home page (www.cityu.edu.hk) from any terminal on campus or off campus.
ii) Log onto "Portal" under "Quick Links".
If you have problems in logging in, please follow the instructions in "Having problems logging?".
iii) Under the tab "Student", you can find a quick link "Student Schedule" to view your timetable for current semester. Timetable for Semester A 2021-2022 is available from **27 July 2021** onwards.

8.2 How to get Instructors' handouts through Canvas

i) Log onto Canvas (https://canvas.cityu.edu.hk) from any terminal on campus or off campus
ii) Click "Courses" to see all courses you have registered in current and previous semesters.

8.3 How to check Major Requirement and Course Syllabuses

Log onto the CityU home page and click "Academic Programmes".

To access DegreeWorks, please go to the "Study Plan" tab in AIMS. For details, please refer to ARRO website: *www6.cityu.edu.hk/arro/content.asp?cid=482*

Important notes:
Students are advised to go through the online tutorials and all materials available on ARRO's website to learn more about DegreeWorks

- *Go to www.cityu.edu.hk/arro*
- *Click "Current Students".*
- *Choose "DegreeWorks".*
- *Read "Introduction", "Tutorials" and "Frequently Asked Questions".*

8.4 Course Registration for Semester A 2021-2022

For Semester A 2021-2022, students will be pre-registered in required courses and major electives in most cases if possible.

i) The date for release of your class schedule is **27 July 2021**. Please check your curriculum requirements, review your study plan and then make appropriate adjustments to your pre-registered courses.
ii) Add/Drop of courses can be made through AIMS for web-enabled courses during the web registration period. For non-web-enabled courses, approval is required from the major department and you can submit your application via an electronic form available in AIMS.

How to do the Add/ Drop:

- Go to *http://www.cityu.edu.hk* from any terminal on campus or off campus and click "Students".
- Log onto "AIMS" and then click "Course Registration".
- Choose "Application for Add/Drop of Non Web-enabled Course & Study Load Adjustment".

iii) Web registration begins on **23 August 2021** but you need to check your time ticket first from "AIMS".
iv) All add/drops end on **6 September 2021.**
v) For detailed arrangements on Course Registration for Semester A 2021-2022, please refer to ARRO website: *http://www.cityu.edu.hk/arro/content.asp?cid=163*

8.5 How to access your Student Email Account

i) Go to *http://www.cityu.edu.hk* from any terminal on campus or off campus, then point to "Quick Links" at the top and click "Email".
ii) In the Email Services homepage, click "@**my.cityu.edu.hk**" under "Student" to go to the CityU "Office 365" Sign In page.
iii) At the "**Account-ID**" field in the Sign In screen, enter your Office 365 account in the form of "*YourEID*-**c**", where *YourEID* is your CityU Electronic ID.
iv) At the "**Password**" field, enter your Office 365 Account password, then click "Log On".

> ***Important note:***
> *For email communication, please state your* ***name in full****,* ***student number*** *and* ***contact telephone number****.*

8.6 Course Exemption/Credit Transfer

Applications for course exemption or credit transfer must be made before the first semester of the student's admission. Students granted course exemption are required to take other courses to make up the credits required for fulfilling the award requirements. For Semester A 2021-2022, the application period is from **15 July to 28 August 2021.**

For details, please refer to ARRO website:
http://www6.cityu.edu.hk/arro/content.asp?cid=10

8.7 Laboratory Safety Orientation

All students are REQUIRED to complete the on-line Laboratory Safety Orientation through the Departmental On-line Information System (IntraMEL). A Lab Tour session will be held by the Laboratory Office in week 1 of Semester A for interested students. Details of the session will be sent to you by e-mail.

8.8 Administrative Support from General Office

Office Hours

Mon to Fri	8:45 am to 5:30 pm *12:30 pm to 1:45 pm (Lunch Break)*
Telephone:	3442-8420
Fax:	3442-0172
Email:	bmego@cityu.edu.hk
Website:	https://www.cityu.edu.hk/bme

Model Study Path

Model Study Path for BENGEGU4 BME 2021 Catalogue Term (non-CES mode)

Yr	Sem	College Requirements / Gateway Education (GE): College-specified Courses				GE: English[@]	Gateway Education & Others		CUs
1	A	PHY1201 General Physics I (3)	CHEM1200 Discovery in Biology (3)	MA1200 Calculus and Basic Linear Algebra I / MA1300 Enhanced Calculus and Linear Algebra I (3)	BME2105 Introduction to Biomedical Engineering (3)	GE1401 University English (3)			**15**
	B	CHEM1300 Principles of General Chemistry (3)	CS1302 Introduction to Computer Programming (3)	MA1201 Calculus and Basic Linear Algebra I / MA1301 Enhanced Calculus and Linear Algebra II (3)		GE2410 English for Engineering (3)		GE 1 (3)	**15**
	S	Reserve for missed courses /					Reserve for missed courses		
2	**Major Requirements**								
	A	BME2102 Introduction to Biomechanics (3)	MA2177 Engineering Mathematics & Statistics (3)	BME2029 Electrical and Electronic Principles (3)	BME2036 Engineering Computing (3)		GE1501 Chinese Civilisation – History and Philosophy (3)		**15**
	B	BME2122 Biological Thermofluids (3)	BME2121 Artificial Intelligence in Biomedical Engineering (3)	BME2103 Medical Biotechnology in Imaging and Measurement (3)	BMS2801 Molecules and Cells (3)			GE 2 (3)	**15**
	S						Reserve for missed courses		
3	A	BME4103 Bio-safety and Security (3)	BME3123 Materials for Biomedical Engineering (3)	BME3121 Biomedical Signals and Systems (3)	BME2104 Tissue Engineering (3)			GE 3 (3)	**15**
	B	BME3102 Human Quantitative Physiology (3)	CS4465 Computational Biology and Bioinformatics (3)	BME3103 Bio-sensors and Bio-devices (3)	BME3104 Health Maintenance and Wellness Technology (3)	Major Elective 1 (3)			**15**
	S	Reserve for IAS or taking some Elective courses available /					Reserve for missed courses		
4	A	BME4102 Final Year Project (3)	BME4101 Biomedical Instrumentation (3)	Major Elective 2 (3)	Major Elective 3 (3)			GE 4 (3)	**15**
	B	BME4102 Final Year Project (6)	BME2066 Professional Engineering Practice (3)	Major Elective 4 (3)			Free Elective (3)		**15**
	S	Reserve for missed Elective courses /					Reserve for missed courses		
( ) indicates number of credits							**Total credits (minimum):**		**120**

[@] *Students whose entry qualifications in HKDSE English Language is below Level 4 are required to take LC0200A and/or LC0200B, and should take the GE English courses in the following semesters/terms.*

Note 1: Students may alter the study path and courses can be taken in any order or in any year of study provided pre-requisite and pre-cursor requirements are satisfied and all graduation requirements could be met within the normative study period.

Note 2: Students can take Major electives from Year 3 depending on their overall study plan.

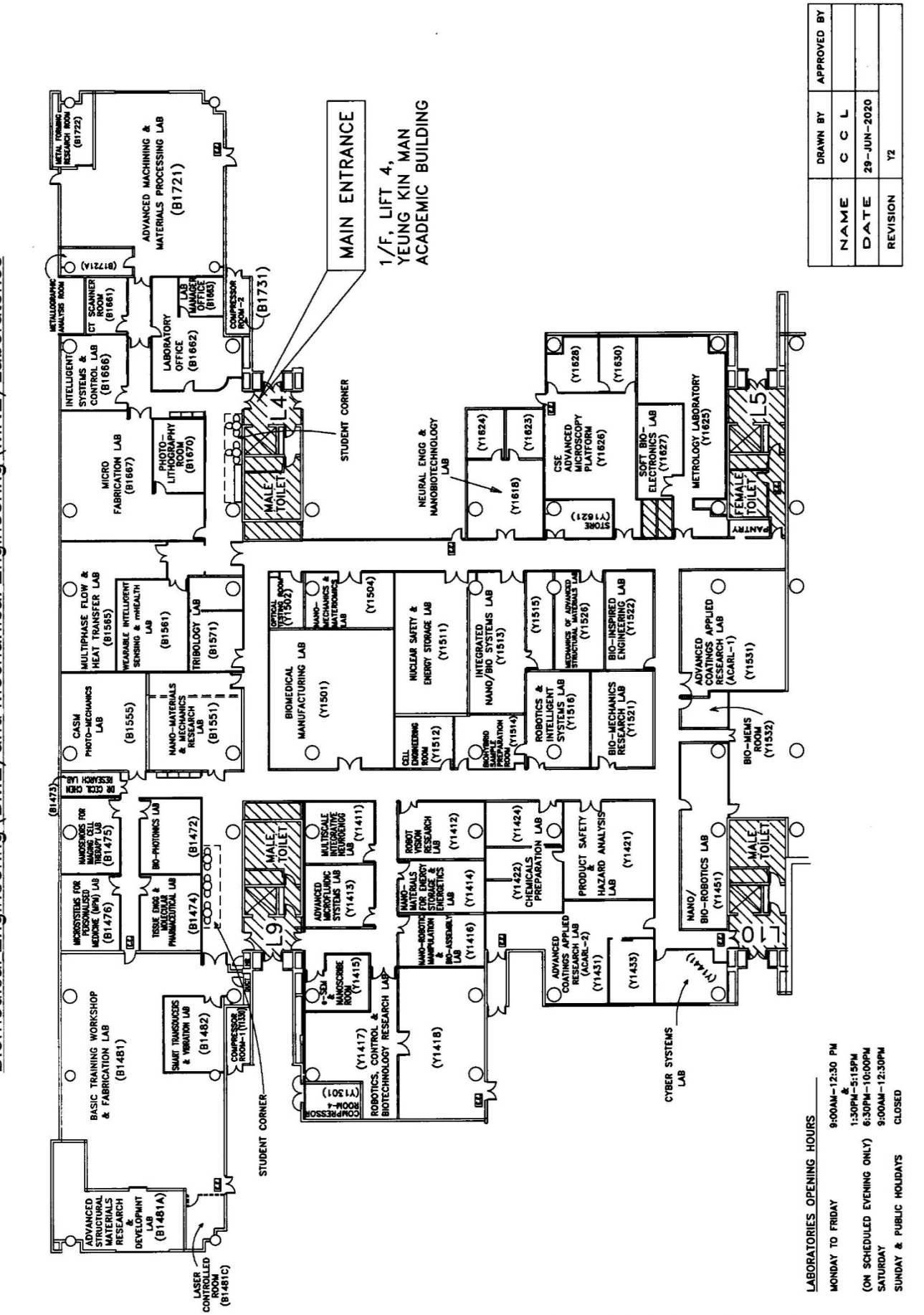
Model Study Path for BENGEGU4 BME 2021 Catalogue Term (Optional CES mode)

Yr	Sem	College Requirements / Gateway Education (GE): College-specified Courses					GE: English[@]	Gateway Education & Others		CUs
1	A	PHY1201 General Physics I (3)	CHEM1200 Discovery in Biology (3)	MA1200 Calculus and Basic Linear Algebra I / MA1300 Enhanced Calculus and Linear Algebra I (3)	BME2105 Introduction to Biomedical Engineering (3)		GE1401 University English (3)			**15**
	B	CHEM1300 Principles of General Chemistry (3)	CS1302 Introduction to Computer Programming (3)	MA1201 Calculus and Basic Linear Algebra I / MA1301 Enhanced Calculus and Linear Algebra II (3)			GE2410 English for Engineering (3)		GE 1 (3)	**15**
	S	Reserve for missed courses /						Reserve for missed courses		
2		**Major Requirements**								
	A	BME2102 Introduction to Biomechanics (3)	MA2177 Engineering Mathematics & Statistics (3)	BME2029 Electrical and Electronic Principles (3)	BME2036 Engineering Computing (3)			GE1501 Chinese Civilisation – History and Philosophy (3)		**15**
	B	BME2122 Biological Thermofluids (3)	BME2121 Artificial Intelligence in Biomedical Engineering (3)	BME2103 Medical Biotechnology in Imaging and Measurement (3)	BMS2801 Molecules and Cells (3)				GE 2 (3)	**15**
	S							Reserve for missed courses		
3	A	BME4103 Bio-safety and Security (3)	BME3123 Materials for Biomedical Engineering (3)	BME3121 Biomedical Signals and Systems (3)	BME2104 Tissue Engineering (3)	Major Elective 1 (3)				**15**
	B	BME3102 Human Quantitative Physiology (3)	CS4465 Computational Biology and Bioinformatics (3)	BME3103 Bio-sensors and Bio-devices (3)	BME3104 Health Maintenance and Wellness Technology (3)	Major Elective 2 (3)				**15**
	S							GE 3 (3)	GE 4 (3)	**6**
4	A	BME4102 Final Year Project (3)	BME4101 Biomedical Instrumentation (3)		CES FS4001 (4)	Major Elective 3 (3)				**13**
	B	BME4102 Final Year Project (6)	BME2066 Professional Engineering Practice (3)		CES FS4001 (4)	Major Elective 4 (3)				**16**
	S	Reserve for missed Elective courses /						Reserve for missed courses		
( ) indicates number of credits								**Total credits (minimum):**		**125**

[@] *Students whose entry qualifications in HKDSE English Language is below Level 4 are required to take LC0200A and/or LC0200B, and should take the GE English courses in the following semesters/terms.*

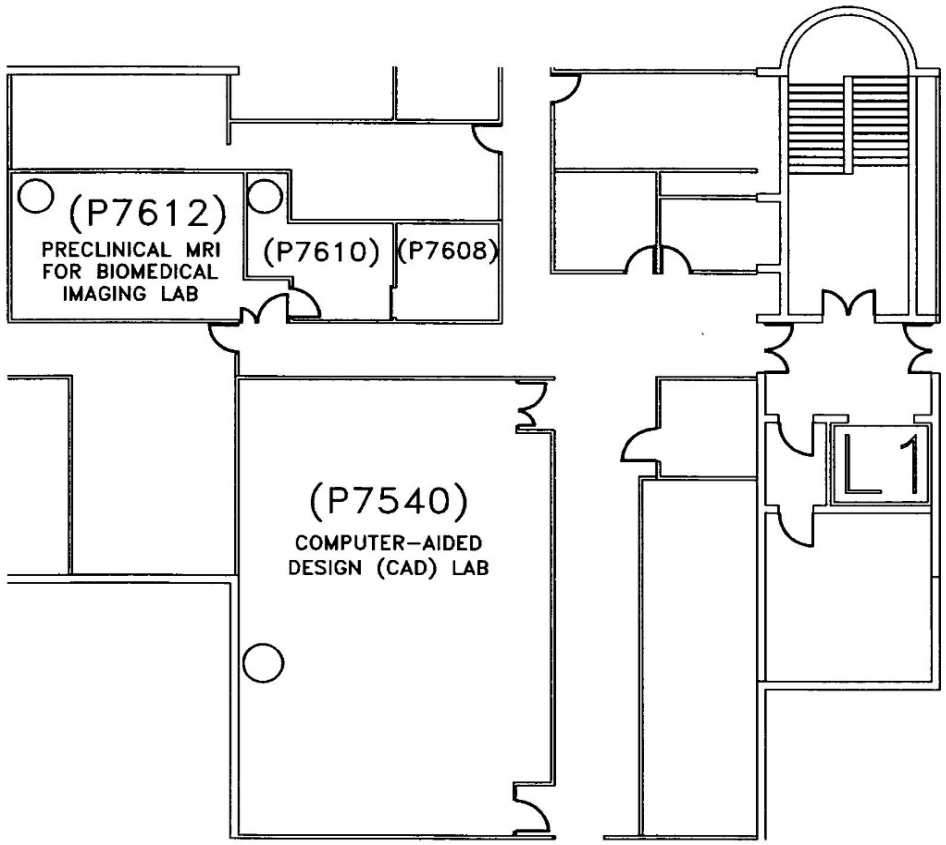
Note 1: Students may alter the study path and courses can be taken in any order or in any year of study provided pre-requisite and pre-cursor requirements are satisfied and all graduation requirements could be met within the normative study period.

Note 2: Students can take Major electives from Year 3 depending on their overall study plan.


Biomedical Engineering (BME) and Mechanical Engineering (MNE) Laboratories
MAIN ENTRANCE
1/F, LIFT 4,
YEUNG KIN MAN
ACADEMIC BUILDING
ADVANCED MACHINING & MATERIALS PROCESSING LAB (B1721)
METAL FORMING RESEARCH ROOM (B1722)
METALLOGRAPHIC ANALYSIS ROOM (B1721A)
CT SCANNER ROOM (B1661)
LAB MANAGER OFFICE (B1665)
LABORATORY OFFICE (B1662)
COMPRESSOR ROOM-2 (B1731)
INTELLIGENT SYSTEMS & CONTROL LAB (B1666)
MICRO FABRICATION LAB (B1667)
PHOTO-LITHOGRAPHY ROOM (B1670)
STUDENT CORNER
MALE TOILET
L4
L5
L3
NEURAL ENGG & NANOBIOTECHNOLOGY LAB
(Y1624)
(Y1623)
(Y1618)
CSE ADVANCED MICROSCOPY PLATFORM (Y1626)
(Y1628)
(Y1630)
STORE (Y1621)
SOFT BIO-ELECTRONICS LAB (Y1627)
METROLOGY LABORATORY (Y1625)
FEMALE TOILET
PANTRY
MULTIPHASE FLOW & HEAT TRANSFER LAB (B1565)
WEARABLE INTELLIGENT SENSING & mHEALTH LAB (B1561)
TRIBOLOGY LAB (B1571)
CASIM PHOTO-MECHANICS LAB (B1555)
NANO-MATERIALS RESEARCH & MECHANICS LAB (B1551)
OPTICAL (Y1502)
NANO-MECHANICS & MATERIOMICS LAB (Y1504)
BIOMEDICAL MANUFACTURING LAB (Y1501)
NUCLEAR SAFETY & ENERGY STORAGE LAB (Y1511)
INTEGRATED NANO/BIO SYSTEMS LAB (Y1513)
(Y1515)
MECHANICS OF ADVANCED STRUCTURAL MATERIALS LAB (Y1526)
BIO-INSPIRED ENGINEERING (Y1522)
CELL ENGINEERING ROOM (Y1512)
BIOHYBRID SAMPLE PREPARATION ROOM (Y1514)
ROBOTICS & INTELLIGENT SYSTEMS LAB (Y1516)
BIO-MECHANICS RESEARCH LAB (Y1521)
ADVANCED COATINGS APPLIED RESEARCH LAB (ACARL-1) (Y1531)
BIO-MEMS ROOM (Y1532)
(B1473)
NANOSENSORS FOR BIOMEDICAL CELL IMAGING LAB (B1475)
BIO-PHOTONICS LAB (B1472)
MICROSYSTEMS FOR PERSONALISED MEDICINE (MPM) LAB (B1476)
TISSUE ENGG & MOLECULAR PHARMACEUTICAL LAB (B1474)
MALE TOILET
MULTISCALE INTEGRATIVE NEUROENGG LAB (Y1411)
ADVANCED MICROFLUIDIC SYSTEMS LAB (Y1413)
ROBOT VISION RESEARCH LAB (Y1412)
NANO-MATERIALS FOR ENERGY STORAGE & ENERGETICS LAB (Y1414)
NANO-ROBOTIC MANIPULATION & BIO-ASSEMBLY LAB (Y1416)
(Y1424)
(Y1422) CHEMICALS PREPARATION LAB
PRODUCT SAFETY & HAZARD ANALYSIS LAB (Y1421)
ADVANCED COATINGS APPLIED RESEARCH LAB (ACARL-2) (Y1431)
(Y1435)
(Y1441)
NANO/ BIO-ROBOTICS LAB (Y1451)
MALE TOILET
L1
L2
L0
BASIC TRAINING WORKSHOP & FABRICATION LAB (B1481)
SMART TRANSDUCERS & VIBRATION LAB (B1482)
COMPRESSOR ROOM-1 (Y1130)
STUDENT CORNER
e-SEM & NANOSCRIBE ROOM (Y1415)
(Y1417)
ROBOTICS, CONTROL & BIOTECHNOLOGY RESEARCH LAB
COMPRESSOR ROOM-4 (Y1301)
(Y1418)
CYBER SYSTEMS LAB
ADVANCED STRUCTURAL MATERIALS RESEARCH & DEVELOPMENT LAB (B1481A)
LASER CONTROLLED ROOM (B1481C)
DRAWN BY
APPROVED BY
NAME
C C L
DATE
29-JUN-2020
REVISION
Y2
LABORATORIES OPENING HOURS
MONDAY TO FRIDAY 9:00AM-12:50 PM & 1:30PM-5:15PM
(ON SCHEDULED EVENING ONLY) 6:30PM-10:00PM
SATURDAY 9:00AM-12:30PM
SUNDAY & PUBLIC HOLIDAYS CLOSED

Biomedical Engineering (BME) and Mechanical Engineering (MNE) Laboratories

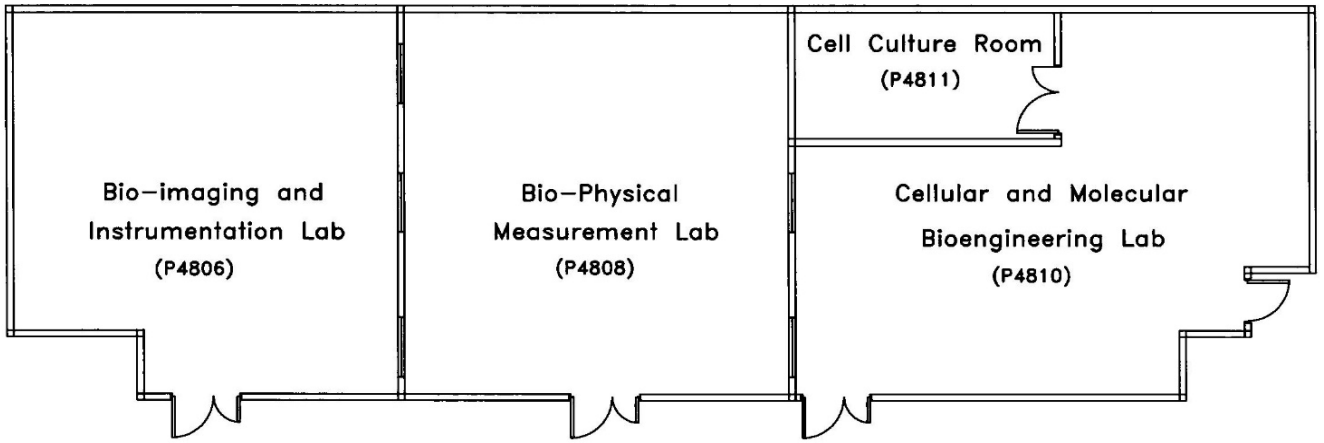
7/F, LIFT 1, PURPLE ZONE,
YEUNG KIN MAN
ACADEMIC BUILDING



	DRAWN BY	APPROVED BY
NAME	C C L	
DATE	03-JUL-2018	
REVISION	A	

BIOMEDICAL ENGINEERING LABORATORIES (BME LAB.)

4/F, LIFT 17, PURPLE ZONE,
YEUNG KIN MAN
ACADEMIC BUILDING



	DRAWN BY	APPROVED BY
NAME	C C L	
DATE	12-Jul-2019	
REVISION	V	