

College of Engineering
工學院

Department of Materials Science and Engineering
材料科學及工程學系



香港城市大學
City University of Hong Kong

Bachelor of Engineering in Materials Science and Engineering

工學士（材料及科學工程）



Student Handbook
2023-2024



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1. Aims of Major

The major aims to educate and produce graduates who will be:

- equipped with working knowledge of the production, characterization, and service performance of engineering materials;
- proficient communicators equipped with a range of disciplines and skills, computer literacy, language proficiency, and the ability to think quantitatively and analyse problems critically;
- able to contribute their specialist skills, alongside other engineering specialists, to the design, manufacture, maintenance, testing and safety of engineering components, devices, structures and process plants;
- able to demonstrate an awareness of the context within which they work, and take responsibility for their own personal and professional development;
- demonstrate the ability to integrate knowledge learned in the major to support in at least an original discovery or creative design relevant to materials engineering.

Intended Learning Outcomes of Major (MILOs)

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

No.	MILOs	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
		A1	A2	A3
1.	apply knowledge of mathematics, science, and engineering appropriate to the materials engineering discipline.		√	√
2.	design and conduct experiments, as well as analyze and interpret data.	√	√	
3.	design a system, component, or process to meet the desired needs within realistic constraints, such as economic, environmental, social, political and ethical expectations, health and safety, manufacturability and sustainability.	√	√	√
4.	function in multi-disciplinary teams.			√
5.	identify, formulate, and solve engineering problems.	√	√	√
6.	recognize professional and ethical responsibility.	√	√	
7.	communicate effectively.			√
8.	recognize the impact of engineering solutions in a global and societal context, especially the importance of health, safety and environmental considerations	√		

	for both workers and the general public.			
9.	recognize the need for, and to engage in life-long learning.		√	√
10.	stay abreast of contemporary issues.		√	
11.	use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the materials engineering discipline.		√	√
12.	use computers and IT relevant to the materials discipline along with understanding of their processes and limitations.		√	
13.	create an original design, or explore the materials engineering area for discovery of new knowledge.	√	√	√

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.

2. Degree Requirements

2.1. 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	72 credit units (Core: 60 Elective: 12)	72 credit units (Core: 60 Elective: 12)	69 credit units (Core: 57 Elective: 12)
Free electives / Minor (if applicable)	12 credit units	0 credit unit	0 credit unit
Minimum number of credit units required for the award	120 credit units	93 credit units	81 credit units

2.2. Gateway Education Requirement

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

For Normative 4-year students

Curriculum Catalogue Term	Semester A 2023/24
	Normative 4-year Degree
<u>University requirements</u>	
English	
• GE1401 University English	3 credit units
• Discipline-specific English: GE2410 English for Engineering	3 credit units
Chinese	
GE1501 Chinese Civilisation – History and Philosophy	3 credit units

<u>Distributional requirements</u> Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	12 credit units <i>(At least one course from each of the three areas)</i>
<u>College/School-specified courses</u> ^	9 credit units
Total	30 credit units

^ **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	
MSE2066	Materials Engineers in Society	B2	3	

For Advanced Standing I and II Students

Curriculum Catalogue Term	Semester A 2023/24	
	Advanced Standing I (Note 1)	Advanced Standing II (Senior-year Entry) (Note 2)
<u>University requirements</u>		
English		
• GE1401 University English	3 credit units	Not a compulsory requirement
• Discipline-specific English: GE2410 English for Engineering	3 credit units	3 credit units
Chinese		
GE1501 Chinese Civilisation – History and Philosophy	3 credit units	Not a compulsory requirement

<u>Distributional requirements</u> Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	6 credit units <i>(From two different areas)</i>	3 credit units
<u>College/School-specified courses</u> ^	6 credit units	6 credit units
Total	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**

Advanced Standing I				
Major in Materials Science and Engineering				
MSE2066	Materials Engineers in Society	B1	3	Students taking Major elective <i>MSE3114 Computational Methods for Physicist and Materials Engineers</i> or <i>PHY4172 Computational Physics</i> may apply for exemption. They are required to complete any course of 3 credits (excluding major core courses and major electives) to replace the exempted credits.
MA1201/ MA1301	Calculus and Basic Linear Algebra II/ Enhanced Calculus and Linear Algebra II	B1	3	
Advanced Standing II (Senior-year Entry)				
MSE2066	Materials Engineers in Society	B2	3	
Any courses not within the Major Requirements (including core courses and electives)		B1/2/3/4	3	For students who failed the MA placement test and are required to complete the pre-requisite courses for their MA core course#, they are advised to take <i>MA1200 Calculus and Basic Linear Algebra I</i> and/or <i>MA1201 Calculus and Basic Linear Algebra II</i> to fulfil this requirement. #Please refer to the Curriculum Information

			Record (CIR) for your major and the Course Syllabus of the relevant MA courses for details.
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2.3. 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)				
Science (6 Credit Units) Choose two from the following three subject areas				
<i>Physics</i>				
PHY1201	General Physics I	B1	3	
<i>Chemistry</i>				
CHEM1300	Principles of General Chemistry	B1	3	
Advanced Standing I (0 credit unit)				
College Requirements waived				
Advanced Standing II (Senior-year Entry) (0 credit unit)				
College Requirement waived				

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.

For Normative 4-year students and Advanced Standing I students

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.

For course details, please refer to ARRO website (http://www.cityu.edu.hk/catalogue/ug/current/catalogue/catalogue_UC.htm?page=B/B_course_MSE.htm). Please always refer to this website for the most updated information.

2.6. Major Requirement

(The catalogue term of the major requirement that students will follow will be the effective term of the declared/allocated major.

For normative 4-year degree students who will join the majors allocation exercise, the catalogue term of major requirement will be one year after admission.

For advanced standing students and 4-year degree students who already have a major at the time of admission, the catalogue term of major requirement will be the same as their admission term.)

Core Courses

- Normative 4-year degree (60 credit units);

- Advanced Standing I (60 credit units);

- Advanced Standing II (57 credit units)

Course Code	Course Title	Level	Credit Units	Remarks
CS1302	Introduction to Computer Programming	B1	3	
PHY1202	General Physics II	B1	3	Students with Grade D or above in HKAL Physics OR students with equivalent qualification may apply for exemption. They are required to complete any course of 3 credits to replace the exempted credits Advanced Standing II students are not required to take this course.
MSE1001	Programme Introduction	B1	0	
MSE2102	Introduction to Materials Engineering	B2	3	
MSE2104	Mechanics of Solids	B2	3	
MSE2106	Quantum Properties of Materials	B2	3	
MSE2107	Measurement Theory and Application	B2	3	
MSE2108	Materials Chemistry	B2	3	
MSE2109	Bonding and Structure of Materials	B2	3	
MSE2243	Workshop Practice	B2	3	
MSE3110	Deformation and Fracture	B3	3	
MSE3113	Soft Materials	B3	3	
MSE3114	Computational Methods for Physicists and Materials Engineers	B3	3	
MSE3171	Materials Characterization	B3	3	
MSE3172	Electronic Properties of Solids	B3	3	

MSE3190	Thermodynamics of Materials	B3	3	
MSE3195	Kinetic Processes in Engineering Materials	B3	3	
MSE3244	Design Laboratory	B3	3	
MSE4116 / FS4003	Dissertation CES Placement Project	B4	6	
MA2001 / MA2158 / MA2181	Multi-variable Calculus and Linear Algebra Linear Algebra and Calculus Mathematical Methods for Engineering	B2	3	Advanced Standing students may be required to complete MA1200 Calculus and Basic Linear Algebra I and MA1201 Calculus and Basic Linear Algebra II (the pre-requisite courses) before they are allowed to enroll MA2001/ MA2158/ MA2177/ MA2181. They are advised to apply and sit for the placement test * organized by MA department before the commencement of Semester A of their admitted academic year. * Placement Test for MA1200 – ASI student Combined Placement test for MA1200 & MA1201 – ASII students * Placement Test for MA1200 – ASI student Combined Placement test for MA1200 & MA1201 – ASII students

Electives (12 credit units)

Course Code	Course Title	Level	Credit Units	Remarks
MA2172	Applied Statistics for Sciences and Engineering	B2	3	
MA2177	Engineering Mathematics and Statistics	B2	3	Advanced Standing students may be required to complete MA1200 Calculus and Basic Linear

				Algebra I and MA1201 Calculus and Basic Linear Algebra II (the pre-requisite courses). They are advised to apply and sit for the placement test * organized by MA department before the commencement of Semester A of their admitted academic year. * Placement Test for MA1200 – ASI student Combined Placement test for MA1200 & MA1201 – ASII students
MSE3111	Ceramic Materials	B3	3	
MSE3130	Biomaterials	B3	3	
MSE4121	Thin Films	B4	3	
MSE4118	Composites	B4	3	
MSE4119	Advanced Computational Methods for Materials Science and Engineers	B4	3	
MSE4124	Failure Analysis and Case Studies	B4	3	
MSE4170	Corrosion and Protection of Materials	B4	3	
MSE4178	Nanostructures & Nanotechnology	B4	3	
MSE4179	Advanced Materials Characterization	B4	3	
MSE4307	Building Materials	B4	3	
MSE4714	Special Topics in Materials Science and Engineering I	B4	3	
MSE4715	Special Topics in Materials Science and Engineering II	B4	3	
FS4002	Industrial Attachment Scheme	B3	3	
FS4005	Overseas Internship Scheme	B3	3	

For course details, please refer to ARRO website (http://www.cityu.edu.hk/catalogue/ug/current/catalogue/catalogue_UC.htm?page=B/B_course_MSE.htm).

Please always refer to this website for the most updated information.

Students may ask for special approval for waiving the course prerequisites. The waiving of course prerequisites would be subject to the approval from both the course leader and the major leader on the basis of the students' academic background.

3. Accreditation by Professional / Statutory Bodies

The BEng degree in Materials Science and Engineering has been accredited by the Hong Kong Institution of Engineers (HKIE) as an award satisfying the academic requirements for its Corporate Membership.

4. Recommended Study Plan

1. A set of core courses (see tables below) is pre-registered for students according to their recommended study plan.
2. Students are advised to plan their study according to the suggested pattern to avoid possible time conflict between courses. They should also pay attention to the Degree Requirements (Section 2) when planning their studies.
3. For GE courses, Chinese course, Electives and Free Electives, students will need to register them on web during the add/drop period.
4. Students wishing to drop/change a pre-assigned course will need to do so on web or using the paper form during the add/drop period. However, after dropping/changing the course, the places may be taken up by other students and you may not be able to enroll in the pre-assigned course again.

For Normative 4-year Degree Students

Year 1

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs
CHEM1300	3	CS1302	3		
GE1401 or EL0200A	3	GE2410 or EL0200B	3		
MA1200 or MA1300	3	MA1201 or MA1301	3	<input checked="" type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning	
MSE1001	0	PHY1202	3		
PHY1201	3	GE Course	3		
<input type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

Year 2

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs
MA2001 / MA2158 / MA2181	3	GE Course	3	MSE2243	3
MSE2102	3	GE Course	3		
MSE2104	3	MSE2107	3	<input checked="" type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning	
MSE2106	3	MSE2108	3		
		MSE2109	3		
		MSE3114	3		
<input checked="" type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input checked="" type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

Year 3

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs
MSE3171	3	MSE3110	3	FS4002 (Optional) #	3
MSE3190	3	MSE3113	3	OR FS4005 (Optional) #	3
MSE3244	3	MSE3172	3	<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning	
Major Elective	3	MSE3195	3		
Free Elective	3	Major Elective	3		
<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

FS4002 and FS4005 can be considered as an elective.

Year 4

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs
MSE4116	3	MSE4116	3		
MSE2066	3	Free Elective	3		
Major Elective	3	Free Elective	3	<input type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input type="checkbox"/> Go Global - Learning Abroad <input type="checkbox"/> Go Global - Service Learning	
Major Elective	3	GE Course	3		
Free Elective	3				
<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

On top of the above 72 required credits in major requirement, students have to satisfy the degree requirement of 30 credits in Gateway Education and 6 credits in College Requirement as specified by the University and 12 credits Free Electives.

For Advanced Standing I Students

Year 2

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs
MSE1001	0	CS1302	3	MSE2243	3
MSE2102	3	PHY1202	3		
GE1501	3	MSE2109	3		
GE1401 / EL0200A	3	GE2410/ EL0200B	3		
^ MA1200/ MA1300	(3)	MSE2108	3		
		MA1201/ MA1301	3	<input checked="" type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning	
<input type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

^ For students who failed the MA placement test and are required to complete the pre-requisite courses for their MA core courses, they are **REQUIRED** to take both MA1200 Calculus and Basic Linear Algebra I and MA1201 Calculus and Basic Linear Algebra II.

Year 3

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs
MSE2104	3	MSE2107	3	FS4002 (Optional) #	3
MSE2106	3	MSE3195	3	OR FS4005 (Optional) #	3
MSE3171	3	MSE3110	3		
MSE3190	3	MSE3114	3	<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning	
MSE3244	3	MSE3172	3		
GE Course	3	MA2001/ MA2158/ MA2181	3		
<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

FS4002 and FS4005 can be considered as an elective.

Year 4

Semester A		Semester B		Summer Term	
Course Code	CUs	Course Code	CUs	Course Code	CUs

MSE4116	3	MSE4116	3		
MSE2066	3	MSE3113	3		
Major Elective	3	Major Elective	3	<input type="checkbox"/> Go Global - Exchange <input type="checkbox"/> Go Global - Internship <input type="checkbox"/> Go Global - Learning Abroad <input type="checkbox"/> Go Global - Service Learning	
Major Elective	3	Major Elective	3		
	3				
<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning		<input checked="" type="checkbox"/> Go Global - Exchange <input checked="" type="checkbox"/> Go Global - Internship <input checked="" type="checkbox"/> Go Global - Learning Abroad <input checked="" type="checkbox"/> Go Global - Service Learning			

On top of the above 72 required credits in major requirement, students have to satisfy the degree requirement of 21 credits in Gateway Education as specified by the University.

5. Academic Regulations

Student should observe the University's Academic Regulation for 4-year Undergraduate Degrees at all times. For further details and most updated information, please always refer to the website of Academic Regulations and Records Office (ARRO) (<https://www.cityu.edu.hk/arro/content.asp?cid=165>).

6. Academic Honesty

Students must pursue their studies with 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 expected to complete the Online Tutorial and Quiz on Academic Honesty and make a Declaration on their understanding of academic honesty.

Plagiarism is a serious offence involving "the use of somebody else's ideas, words, etc. as one's own". Examples of such acts are copying other students' work in examinations, tests, or coursework assignments, repetition of part or whole sentences/paragraphs/any materials from hard-copy publications or online sites for one's own use **without acknowledgement of the source in one's work.**

Students who commit an act of academic dishonesty which is regarded as a **serious academic offence** in the University may lead to disciplinary action with a penalty including without limitation, expulsion from the University, debarment from re-admission, deprivation of an academic award already conferred or revocation of a certification granted.

For details of the rules on Academic Honesty, students should refer to the website of Office of the Provost (www.cityu.edu.hk/provost/academic_honesty/rules_on_academic_honesty.htm).

7. Assessment

Students are assessed through a variety of methods, creating ample opportunity to demonstrate their abilities. The means of assessment vary from course to course but typically include coursework as well as the more traditional written examinations. Coursework consists of written assignments, computer simulations, tutorials, project, laboratory reports and presentations etc. Examinations are held at the end of each course.

For undergraduate courses, students have to obtain at least 30% of the maximum marks in the final examination in order to pass a course (i.e. D or above) where there is an examination component in the assessment for the majority of courses. For the details, please refer to the individual course syllabus.

Students should check the updated minimum passing mark for specific courses under the section of “Programmes and Courses” of the ARRO’s website (www.cityu.edu.hk/arro).

7.1. Mitigation

A student who believes that his/her ability to attend an examination, or in-course assessment with a weighting of 20% or above, has been adversely affected by circumstances beyond his/her control may submit a mitigation request with the scanned relevant supporting documents (e.g. medical certificate) to the Department via AIMS **no later than 5 working days from the scheduled date for completing the affected examination or assessment. It is the student’s responsibility to hand in the original copies of all the required documents to the Department by the aforesaid deadline as well.**

Upon receipt of a mitigation request (including the original copies of the required documents), the Department will investigate the case, in consultation with the course-offering academic unit (if appropriate). Only compelling reasons such as illness, hospitalization, accident, family bereavement or other unforeseeable serious circumstances will be considered. If the case is substantiated, the Assessment Panel will then decide if a make-up examination or coursework or other alternative assessment will be offered to the student concerned. **Only one make-up examination will be arranged per course per semester.**

7.2. Award Classifications

For students who are on programmes of (i) Normative 4-Year Degree admitted in 2019/20 and before, (ii) Advanced Standing I admitted in 2020/21 and before, and (iii) Advanced Standing II admitted in 2021/22 and before, they will be granted an award with classification based on their CGPA as follows:

<u>Award Classifications</u>	<u>CGPA</u>
First Class Honours	3.50 or above
Upper Second Class Honours	3.00 – 3.49
Lower Second Class Honours	2.50 – 2.99
Third Class Honours	2.00 – 2.49
Pass	1.70 – 1.99

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:

<u>Award with Distinctions</u>	<u>Awarded to Graduates Ranked in</u>
<i>summa cum laude</i>	top 2%
<i>magna cum laude</i>	next 5%
<i>cum laude</i>	next 8%

7.3. Academic Regulations on Termination of Study

The Examination Board may terminate the study of a student under the following circumstances:

- (i) The student's SGPA is below 1.70 for any three enrolled semesters; or
- (ii) The student's academic progress is unsatisfactory and is unable to meet the conditions stipulated by the home academic unit after being put on Academic Probation for one consecutive semesters.

Students' studies will be **TERMINATED** if they **FAIL** to pass a required course, or its equivalent/substitute course, after **THREE** attempts.

Further details can be obtained from the ARRO's website, under the section of "Current Students" → "Regulations & Guidelines" (www.cityu.edu.hk/arro).

8. Late drop policy

Students can add or drop a course during the add/drop period prescribed by the University. After the add/drop deadline, requests for late drop of courses will **NOT** be entertained unless under exceptional circumstances (e.g. medical grounds). Such late requests must be submitted no later than the end of the teaching period for the relevant semester/term for approval by the Head of the course-offering academic unit.

9. Laboratory safety

Students under 18 **MUST** read the Information and complete the “Parental Consent Form for Students under the Age of 18” in relation to Safety Regulations in Laboratories. The form should be signed by your parents and be returned to the General Office of Department of Materials Science and Engineering (R7112, 7/F, BOC (HK) Complex) **by 4 September 2023**.

General Rules on Safety in Laboratories

All laboratory workers are bound by the Safety Regulations of the City University as well as the relevant enacted laws and ordinances.

In addition, the following rules should be adhered to.

1. Undergraduate students are **NOT ALLOWED TO WORK** in a laboratory **WITHOUT SUPERVISION**.
2. Undergraduate students are **NOT ALLOWED TO KEEP ANY KEY** of the laboratories.
3. New research students/staff are **NOT ALLOWED TO WORK** in a laboratory before the completion of the safety training.
4. Students/staff **SHOULD NOT WORK ALONE** in a laboratory; when he/she needs to work with hazardous chemicals, e.g., strong acids and alkalis or on electricity connection, there **MUST** be at least one more person in the same room. All research personnel should seek the help of a companion when he/she must work in the laboratory outside normal office hours, otherwise he/she is required to utilize the Personal Alarm System in labs. Experiments should not be left unattended.
5. Prior approval from your supervisor is needed to stay in a laboratory beyond 11:00 p.m. Please download and print this form (<https://www6.cityu.edu.hk/mse/programmes/Safety/1overnight.pdf>) for this application.
6. **SMOKING, EATING & DRINKING ARE STRICTLY FORBIDDEN**. Do not bring food or drinks into a laboratory.
7. **DO NOT RUN OR PLAY** in laboratories.
8. Loose clothing is potentially hazardous. Secure ties and tie up long hair. You are also advised to wear laboratory coat.
9. Familiarise yourselves with the **FIRE EXITS** and **ESCAPE ROUTES**. These are posted in every laboratory.

10. Familiarise yourself with [EMERGENCY PROCEDURES](#). These are posted at the entrance of each laboratory.
11. [Wastes & solvents](#) must be disposed of properly. Consult your supervisor or the technicians in case of doubt.
12. All accidents must be reported to the technical officer/supervisor immediately.
13. Wearing EYE PROTECTION is mandatory when working with hazardous chemicals or operating UV instruments or LASERS, and in laboratories where such notices are posted. Consult your supervisor or the technicians for the appropriate type of eye-protection equipment. In other areas, you are encouraged to wear eye protection as a good safety practice. Users of laser classes 3B and 4 are reminded to undergo eye-sight tests arranged by the university. This should be carried out before the first use of laser and again before leaving the university.
14. Before commencement of a new experiment, you should complete a RISK ASSESSMENT (You may download the form here: <http://www.cityu.edu.hk/mse/programmes/Safety/5risk-assessment.pdf>) and obtain approval from your supervisor.
15. There is a separate set of rules governing the use of Radiation Laboratories. These are posted at the entrance of the Radiation Laboratory. All users must observe these [rules](#).

Safety Guidelines:

- [Declaration form_Non-CityU lab users](#)
- [Guidelines of Handling and Characterization of Human Tissues](#)
- [Laboratory Safety Discipline Policy](#)
- [Electron Microscope Regulations](#)

Useful Links:

- https://www.cityu.edu.hk/arro/files/file/hk/Enrolment/Parental_Consent_Form_for_student_under_18.pdf

In case of inquiry, please contact:

Department Safety and Chemical Officer:
Prof. Feng Wang
Room R7195, 7/F, BOC (HK) Complex
Tel. 3442 4898

10. Communication channels

There are various channels of communication between students and the Department. On an informal basis, students having academic difficulties with a course are encouraged to approach their academic advisors, lecturer or tutor concerned.

A formal consultative channel between students and faculties is established via the Joint Staff/Student Consultative Committee (JSSCC) and Programme Committee. The Programme Committee is charged with the responsibility of monitoring the operation and quality assurance of the programme. 2-3 student representatives from each cohort will be nominated for joining the committees. The Committees meet at least once a semester. At the meetings, students can express their views on the curriculum and organization of the programme.

Students are also welcome to approach the major leaders, academic advisors or course leaders whenever they encounter any study-related difficulties.

Major Leader

Prof Stephen Tsang

Office: R7127, 7/F, BOC (HK) Complex

Phone: 3442 4618

Email: saitsang@cityu.edu.hk

Deputy Major Leader

Prof Jun Fan

Office: R7141, 7/F, BOC (HK) Complex

Tel: 3442 9978

E-mail: junfan@cityu.edu.hk

Academic Advisors

Prof CY Chung

Office: R7123, 7/F, BOC (HK) Complex

Tel: 3442 7835

E-mail: appchung@cityu.edu.hk

Prof Xiaoyan Zhong

Office: R7124, 7/F, BOC (HK) Complex

Tel: 3442 6850

E-mail: xzhong25@cityu.edu.hk

11. Useful information

11.1 Course registration for 2023-24

- For 2023-24, students will be pre-registered in some of the required courses including MSE1001, MSE2102, MSE2104, MSE3110, MSE3171, MSE3172, MSE3190, MSE3195, MSE3244, MSE2066, MSE4116, MA1200, MA1201, GE1401 and GE2410 and PHY1201, PHY1202, PHY1203.
- The web registration period for Semester A will start **from 28 August 2023 and end on 11 September 2023** but **you need to check your time ticket from “AIMS”**. For details on course registration, please refer to “Course Registration” under ARRO website (<http://www.cityu.edu.hk/arro/content.asp?cid=760>).
- Please check your curriculum requirements, review your study plan and then make appropriate adjustments to your course registration **after consulting your academic advisors if necessary**.
- Add/Drop of courses can be made through AIMS for web-enabled courses during the web registration period.
- For non-web-enabled courses, students should seek endorsement from the **course-offering academic units** by using the Add/Drop Form before submitting the change request to ARRO.
- If a student drops a course after the add/drop period, an ‘X’ grade will be assigned for the course. The ‘X’ grade will be printed on the student’s transcript.

Important notes

How to do the Add/ Drop on web

- Go to www.cityu.edu.hk from any terminal on campus or off campus and click “Students”.
- Log onto “AIMS” and then click “Course Registration”.
- Choose “Add or Drop Classes”.

For details on course registration arrangements for 2023-2024, please refer to “Course Registration” under ARRO website

(<https://www.cityu.edu.hk/arro/content.asp?cid=152>).

11.2 How to access your personal class schedule

- Go to CityU home page (www.cityu.edu.hk) from any terminal on campus or off-campus.
- Log onto “e-Portal” under “Quick Links” or “My CityU”. *If you have problems in logging in, please follow the instructions in “Having problems logging in?”*.
- Select “View Student Schedule” under the “Courses I am taking” box.
- Press the “View Detail Schedule” button at the bottom of your timetable to display details of your class schedule.

11.3 How to obtain instructors' handouts through Canvas

- Go to CityU home page (www.cityu.edu.hk) from any terminal on campus or off campus.
- Log onto "Canvas" under "Quick Links".
- Click "Courses".

Canvas User Guides are available at "e-Learning" under the "IT Links" of the OCIO website (http://www6.cityu.edu.hk/elearn/elearn_stud.html).

11.4 How to check curriculum requirements and course syllabuses

- Go to CityU home page (www.cityu.edu.hk)
- Click "Academic Programmes".

11.5 How to access your student email account

- Go to www.cityu.edu.hk from any terminal on campus or off.
- Click "Email" under "My CityU"
- Click "@my.cityu.edu.hk (office 365)"

**For email communication, please state your name, student number, contact telephone number, programme and entry cohort.*

**Always check and clear your email account, and make sure it does not exceed the quota (a maximum of 25GB).*

11.6 How to access DegreeWorks

DegreeWorks is a web-based academic advising and degree audit tool primarily introduced for undergraduate students under the 4-year degree curriculum. DegreeWorks matches a student's academic record against the curriculum requirements. It offers a user-friendly interface that helps students learn easily what courses they still need to take to fulfill the requirements of College/School, GE, major, minor, etc. It also facilitates communication between students and advisors.

Students are encouraged to use the "Planner" function in DegreeWorks. "Planner" helps you create a long term study plan for your degree completion. Using this tool, you can easily discuss your academic goals and plan with your Advisor.

- Go to www.cityu.edu.hk from any terminal on campus or off campus.
- Log onto "AIMS".
- Go to the "Study Plan" tab in AIMS.
- Then you can view the Student advising worksheet and advising notes, and access other features available in DegreeWorks.

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".

12. Student Development Services (SDS)

The SDS offers many student-centred services to students. It provides support and assistance for students in the following areas:

- Attainment of an all-round development
- Enrichment of campus life
- Development of career plans and choices
- Solving personal problems
- Enhancement of physical and mental well-being
- Provision of financial assistance
- Scholarship application
- Welfare provisions

If you need any advice on your personal issues other than academic concerns, you may approach SDS to schedule a counselling appointment:

Tel.: 3442 8478

E-mail: sds@cityu.edu.hk

Address: Student Development Services, 6/F, Amenities Building

13. Administrative Support from General Office

Address : R7112, Lift 13, Bank of China (Hong Kong) Complex
Office : 9:00 a.m. – 12:30 p.m.
Hours : 2:00 p.m. – 5:45 p.m.
Telephone : (852) 3442 2985
Fax : (852) 3442 0892
Email : mse@cityu.edu.hk
Website : <https://www.cityu.edu.hk/mse/>

14. Appendix: Academic Staff Profile

STAFF

Head and Chair Professor

Prof Xiaocheng Zeng

BS Peking University, China

PhD The Ohio State University, USA

Email : xzeng26@cityu.edu.hk

Associate Head and Professor

Prof Johnny C Y Ho

BSc MSc PhD University of California,

Berkeley, USA

Email : johnnyho@cityu.edu.hk

AREAS OF SPECIALISM

Computational research on physics and chemistry of water surface, confined fluid in nanopores, wetting/dewetting on nanostructured surfaces, thermodynamics and phase transitions of water/ice/ice hydrate, structural evolution of nanoclusters, heterogeneous catalysis, and physical properties of low-dimensional materials and perovskites

Monolayer Assisted Nano-Scale Processing
Synthesis and Characterization of Fundamental Properties of Nano-Materials
Large-Scale and Heterogeneous Integration of Nano-Materials for Flexible and High Performance Technological Applications

Chair Professors

Lee Shau Kee Chair Professor of Materials Science

Director of Hong Kong Institute for Clean Energy

Chair Professor, Chemistry and Materials Science

Prof Alex Jen

BSc *National Tsing Hua University, Taiwan*

PhD *University of Pennsylvania, USA*

Fellow, The Materials Research Society

Member, Washington State Academy of Sciences

Fellow, The American Chemical Society

Fellow, The American Chemical Society,

Div. of Polymeric Materials Science &

Engineering

Fellow, The Optical Society of America

Fellow, The International Society of Optical

Engineering

Fellow, American Association for the

Advancement of Science

Member of Advisory Board, Institute of

Chemistry, Academia Sinica, Taiwan

Email : alexjen@cityu.edu.hk

Utilizing molecular, polymeric, and biomacromolecular self-assembly to create ordered arrangement of organic and inorganic functional materials for photonics, optoelectronics, nanomedicine, and nanotechnology

Employing the “molecular engineering” approach to tailor size, shape, sequence, and functionality of organic/hybrid functional materials and explore their applications

Yeung Kin Man Chair Professor in Photonics Materials

Director of the Centre for Functional Photonics

Prof Andrey L Rogach

Diploma PhD *Belarusian State University, Belarus*

Belarus

Dr habil Ludwig-Maximilians University, Germany

Germany

Email : andrey.rogach@cityu.edu.hk

Colloidal semiconductor (quantum dots) and metal nanocrystals

Prof Fu-Rong Chen

BSc *National Tsing Hua University, Taiwan*

PhD *Stony Brook University, USA*

Email : frchen@cityu.edu.hk

Low Dose 3D atomic resolution electron tomography

Soft materials dynamics imaging

Quantum electron microscopy

Solar energy tunable (SET) glass

Prof Yun Chi

BSc *National Tsing Hua University, Taiwan*

PhD *University of Illinois at Urbana–Champaign, USA*

Academician, Asia Pacific Academy of Materials

Email : yunchi@cityu.edu.hk

Organic and organometallic materials

OLEDs

DSSC

Perovskite solar cells (PSC)

Prof Paul K Chu

BSc *The Ohio State University, USA*

MSc PhD *Cornell University, USA*

Fellow, American Vacuum Society

Fellow, American Physical Society

Fellow, Institute of Electrical and

Electronics Engineers

Fellow, Materials Research Society

Fellow, Hong Kong Institution of Engineers

Fellow, Hong Kong Academy of Engineering

Science

Email : paul.chu@cityu.edu.hk

Plasma science and engineering

Surface engineering of functional materials

Biomaterials and nanobiology

Energy and sensor materials

Nanostructured thin films and interfaces

Prof Yuntian Zhu

PhD *The University of Texas at Austin, USA*

B.S. *Hefei University of Technology, China*

Fellow, The Minerals, Metals and Materials Society (TMS)

Fellow, Materials Research Society (MRS)

Fellow, American Physical Society (APS)

Fellow, ASM International

Fellow, American Association for the

Advancement of Science (AAAS)

Email: yuntizhu@cityu.edu.hk

Deformation mechanisms at dislocation level

Mechanical behaviors of heterostructured materials

Nano/ ultrafine-grained materials

Prof King-Ning Tu

PhD *Harvard University, USA*

B.S *National Taiwan University, Taiwan*

Email: kntu@cityu.edu.hk

Thin Film Materials Science

Kinetics in Nanoscale Materials

Reliability Science in Microelectronic Devices

Prof Chunyi Zhi

BSc *ShanDong University, China*

PhD *IOP, CAS, China*

Email : cy.zhi@cityu.edu.hk

Aqueous electrolyte batteries,

Zinc batteries

Solid-state batteries

Flexible energy storage

Catalysts for sustainable development

Professors

Prof Jr-Hau HE

BS PhD *National Tsing Hua University, Taiwan*

Email : jrhauhe@cityu.edu.hk

Light -mater interaction

Photon management on the light harvesting devices

Associate Dean of Chow Yei Ching School of Graduate Studies

Prof Robert K Y Li

BA BAI MA PhD *Dublin University, Ireland*

Email : aprkyl@cityu.edu.hk

Polymer engineering

Composite materials

Prof Lawrence C M Wu

BSc(Eng) PhD *University of Bristol, UK*
PgDMS *University of West of England, UK*
Fellow, Hong Kong Institution of Engineers

Email : lawrence.wu@cityu.edu.hk

Engineering failure analysis

Nano-materials for solar cells and biosensor

Prof C H Shek

BSc(Eng) PhD *University of Hong Kong*

Email : apchshek@cityu.edu.hk

Phase transformation in metallic materials

Nanostructured materials

Bulk metallic glasses

Prof Feng Wang

BEng PhD *Zhejiang University, China*

Email : wang.feng@cityu.edu.hk

Luminescent Nanomaterials

Photon Upconversion

Optical Spectroscopy

Prof Angus H L Yip

PhD *University of Washington, USA*
BSc MPhil *The Chinese University of Hong Kong*
Email: a.yip@cityu.edu.hk

Processing-property relationship study of organic and hybrid perovskite electronic devices
Device physics and photophysics of optoelectronic materials and devices
Emerging light emitting materials and devices
Printing and patterning techniques of flexible and large-area electronic devices
Design of new photovoltaic technology for building integration
Self-powered greenhouse with artificial lighting technology

Prof Qichun Zhang

Ph.D *University of California, Riverside, USA*
M.S. *University of California, USA*
M.S. *Chinese Academy of Sciences, China*
B.S. *Nanjing University, China*
Email: qiczhang@cityu.edu.hk

Carbon-rich materials and their applications
Novel electrode materials for Microbial Fuel Cells and energy storage devices

Prof Bin Liu

PhD *University of Minnesota, USA*
BEng MEng *National University of Singapore, Singapore*
Email: bliu48@cityu.edu.hk

Photo(electro)catalysis and in-situ/operando characterization

Prof Dangyuan Lei

BSc *Northwest University, USA*
MSc *Chinese University of Hong Kong*
PhD *Imperial College London, UK*
Email: dangylei@cityu.edu.hk

Nanophotonics and optical spectroscopy

*Associate Professors***Prof Jonathan C Y Chung**

BSc(Eng) PhD *University of Hong Kong*
Member, *Hong Kong Institution of Engineers (Materials & Biomedical)*
Email : appchung@cityu.edu.hk

Metallic materials
Shape memory alloy
Powder metallurgy
Battery materials

Prof Jun Fan

BEng *Tsinghua University, China*
MSc *McMaster University, Canada*
PhD *Princeton University, USA*
Email : junfan@cityu.edu.hk

Theoretical and Computational Biophysics

Prof Derek Ho

MASc BSc *University of British Columbia, Canada*

PhD *University of Toronto, Canada*

Member, Institute of Electrical and Electronics Engineers

Email : derekho@cityu.edu.hk

Smart chemical, optical, and bio-sensors
CMOS computational image sensors
Lab-on-a-chips and instrumentation for time-resolved luminescence imaging
Materials synthesis and device fabrication of metal-oxide semiconductor
Circuits for sensor interface and signal processing, with emphasis on bioelectronics
Sensor system integration for medical, industrial, and environmental applications

Prof Yang Yang Li

BSc *Peking University, China*

MSc PhD *University of California, San Diego, USA*

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Electrochemical nanofabrication
Functional porous nanomaterials
Sensors
Electrode materials
Smart biomaterials

Prof Stephen Tsang

MPhil BEng *The Chinese University of Hong Kong*

PhD *University of Toronto, Canada*

Email : saitsang@cityu.edu.hk

Advanced materials for photovoltaic application
Solution processed electronic materials
Semiconductor device physics
Spectroscopy techniques

Prof J Antonio Zapien

PhD *The Pennsylvania State University, USA*

BSc *UNAM, Mexico*

Email : apjajs@cityu.edu.hk

Nanomaterials and nanotechnology
Nano-photonics and nano-optoelectronics
Optical properties of materials
Nucleation and growth of thin films

Prof Xiaoyan Zhong

PhD *Tsinghua University, China*

B.S *Tsinghua University, China*

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Electron magnetic circular dichroism
Electron energy-loss spectroscopy
Aberration-corrected transmission electron microscopy
Atomic scale magnetic imaging and spectroscopy
Energy storages and conversions
Flexible devices
Nanomaterials
Thermal managements

Prof Guo Hong

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Assistant Professors

Prof Chin Yiu Chan

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BSc. *Chinese University of Hong Kong*

Email: chinychan2@cityu.edu.hk

Organic/organometallic chemistry,
Photochemistry/physics,
Materials chemistry
Device engineering

Prof Jian Han

PhD *University of Pennsylvania, USA*
B.S *Shanghai Jiao Tong University, China*
Email: jianhan@cityu.edu.hk

Thermodynamics and kinetics of defects;
dislocations, interfaces and triple junctions
Mechanical properties of materials and the
underlying mechanisms
Irradiation damage in polycrystals
Molecular dynamics; classical/kinetic Monte
Carlo simulations; topological framework for
local structure analysis

Prof Qiyuan He

PhD *Nanyang Technological University*
MSc *Fudan University*
BSc *Wuhan University*
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Nanoelectronics devices
Chemical/bio-sensors
Thin film electronics
Two-dimensional semiconductors
On-chip electrochemistry

Prof Zhaoxuan Wu

BEng *National University of Singapore, Singapore*
PhD *Nanyang Technological University, Singapore*
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Dislocation core, crack-tip, fracture behaviors
and alloying effects in hcp metals

Prof Tao Yang

PhD *City University of Hong Kong*
MSc *Xiamen University, China*
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Physical metallurgy of advanced metallic
metals, especially the multicomponent high-
entropy alloys, superlattice intermetallic alloys,
and hetero-structured alloys
Nanoprecipitation and grain-boundary
segregation engineering
High-temperature structural materials
Electrocatalysis intermetallic alloys

Prof Zhiyuan Zeng

BS *Central South University, China*
MS *Zhejiang University, China*
PhD *Nanyang Technological University, Singapore*
Email: zhiyzeng@cityu.edu.hk

Battery intercalation for material synthesis,
mechanism study and energy applications
Failure mechanism study of Li-ion batteries
using in-situ/ex-situ characterizations
Rational design of 2D transition metal
dichalcogenides composites for CO₂
reduction
Fabrication of graphene nanomesh by using
AAO template for FET application

Prof Jing Li

PhD *City University of Hong Kong*
BS *Wuhan University*
Email: jingli76@cityu.edu.hk

Soft matter
Interfacial heat and mass transfer
Bioinspired engineering
Metamaterial design
Multiphase flow

Prof Zhenbin Wang

Ph.D. *University of California, San Diego, USA*

BEng *Harbin Institute of Technology, China*

MEng *University of Science and Technology of China*

Molecular dynamics simulation

Materials informatics

Materials informatics

Analysis toolkit Materials/catalyst theory, electro-/photo(electro)catalysis, energy storage and conversion

Prof Xiaolong Ma

PhD *North Carolina State University*

BS *Zhejiang University*

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Mechanism-driven design of advanced

structural materials with superior properties

