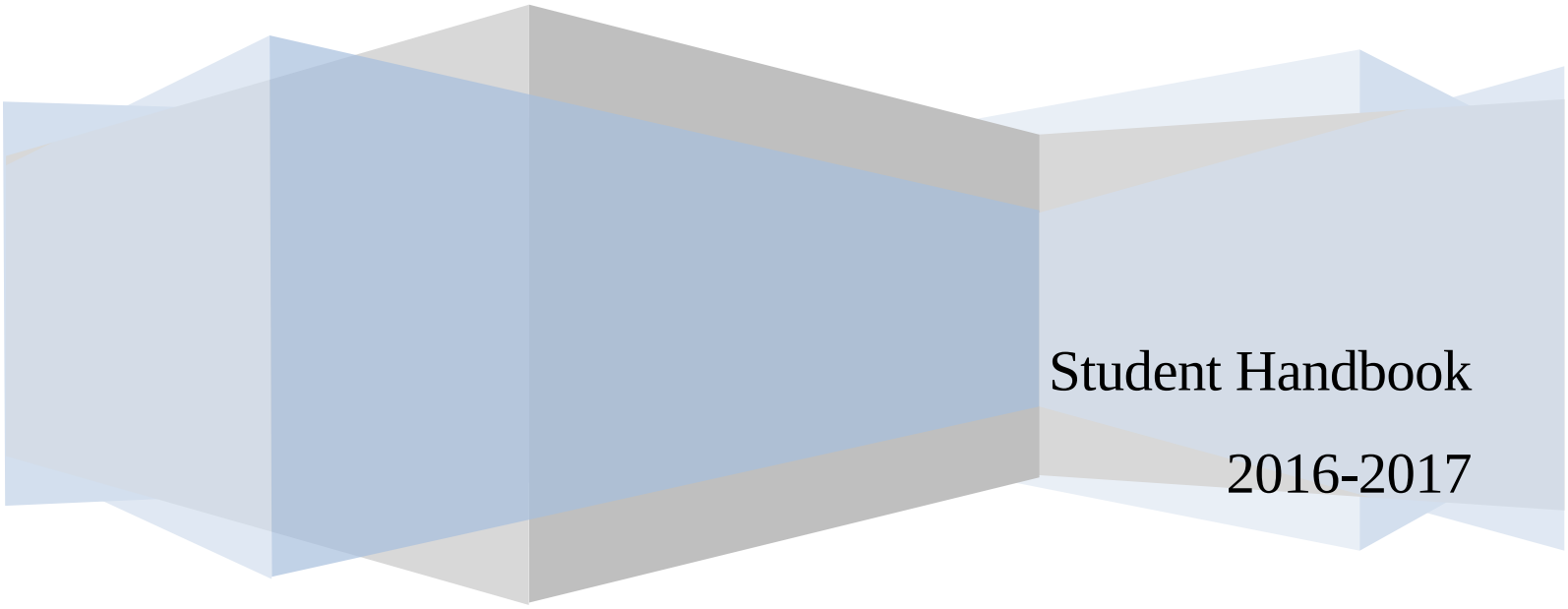
香港城市大學
City University of Hong Kong
專業 創新 胸懷全球
Professional·Creative
For The World

College of Science and Engineering
科學及工程學院

**Department of Physics and Materials Science**
物理及材料科學系

# Bachelor of Engineering in Materials Engineering
工學士 (材料工程學)



Student Handbook

2016-2017

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August 2016

## 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 | 75 credit units (Core: 51 Elective: 24) | 75 credit units (Core: 51 Elective: 24) | 69 credit units (Core: 45 Elective: 24) |
| Free electives / Minor (if applicable) | 9 credit units | 0 credit unit | 0 credit unit |
| **Minimum number of credit units required for the award** | **120 credit units** | **96 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 2015/16** |
|---|---|
| | **Normative 4-year Degree** |
| University requirements | |
| English | |
| • GE1401 University English | 3 credit units |
| • Discipline-specific English | 3 credit units |
| GE1501 Chinese Civilisation – History and Philosophy | 3 credit units |

| | |
|---|---|
| Distributional requirements<br>Area 1: Arts and Humanities<br>Area 2: Study of Societies, Social and Business Organisations<br>Area 3: Science and Technology | 12 credit units<br><br>*(At least one course from each of the three areas)* |
| College/School-specified courses ^ | 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 | |
| CS1102/ CS1302 | Introduction to Computer Studies/ Introduction to Computer Programming | B1 | 3 | |

**For Advanced Standing I and II Students**

| **Curriculum Catalogue Term** | **Semester A 2016/17 onwards** | |
|---|---|---|
| | **Advanced Standing I (Note 1)** | **Advanced Standing II (Senior-year Entry) (Note 2)** |
| University requirements | | |
| English | | |
| • GE1401 University English | 3 credit units | Not a compulsory requirement |
| • Discipline-specific English | 3 credit units | 3 credit units |
| GE1501 Chinese Civilisation – History and Philosophy | 3 credit units | Not a compulsory requirement |

| | | |
|---|---|---|
| Distributional requirements<br>Area 1: Arts and Humanities<br>Area 2: Study of Societies, Social and Business Organisations<br>Area 3: Science and Technology | 6 credit units<br><br>*(From two different areas)* | 3 credit units |
| College/School-specified courses ^ | 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 Engineering** | | | | |
| CS1102/ CS1302 | Introduction to Computer Studies/ Introduction to Computer Programming | B1 | 3 | Students taking Major elective *AP3114 Computational Methods for Physicist and Materials Engineers* or *AP4172 Simulation and Modelling in Multidisciplinary Sciences* may apply for exemption. They are required to complete any course of 3 credits (**NOT within the major requirements including core courses and 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)** | | | | |
| Any courses not within the Major Requirements (including core courses and electives) | | B1/2/3/4 | 6 | |

### 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)<br>Choose **two** from the following three subject areas | | | | |
| *Physics* | | | | |
| AP1201 | General Physics I | B1 | 3 | |
| *Chemistry* | | | | |
| BCH1100 | Chemistry | B1 | 3 | |
| *Biology* | | | | |
| BCH1200 | Discovery in Biology | 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 admitted to CityU in 2015/16**

*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 a 6-credit unit course EL0200 English for Academic Purpose prior to taking the GE English courses. The 6 credit units of EL0200 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.*

**For Advanced Standing I Students admitted to CityU in 2016/17**

*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, EL0200A English for Academic Purposes 1 and EL0200B 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 EL0200A 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*

*EL0200B. The credit units of EL0200A and EL0200B 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/ug/current/catalogue/catalogue_UC.htm?page=B/B_course_AP.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 (51 credit units);**

**- Advanced Standing I (51 credit units);**

**- Advanced Standing II (45 credit units)**

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| AP1202 | 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<br>Advanced Standing II students are not required to take this course. |
| AP1203 | General Physics III | B1 | 3 | Advanced Standing II students are not required to take this course. |
| AP2102 | Introduction to Materials Engineering | B2 | 3 | |
| AP2104 | Mechanics of Solids | B2 | 3 | |
| AP2243 | Workshop Practice | B2 | 3 | |
| AP3109 | Kinetic Processes in Engineering Materials | B3 | 3 | |
| AP3110 | Deformation and Fracture | B3 | 3 | |
| AP3169 | Materials Testing Techniques | B3 | 3 | |

| | | | | |
|---|---|---|---|---|
| AP3171 | Materials Characterization Techniques | B3 | 3 | |
| AP3172 | Electronic Properties of Solids | B3 | 3 | |
| AP3190 | Thermodynamics of Materials | B3 | 3 | |
| AP3244 | Design Laboratory | B3 | 3 | |
| AP4116 / FS4003 | Dissertation<br>CES Placement Project | B4 | 6 | |
| AP4101 | Materials Engineers in Society | B3 | 3 | |
| MA2001 /<br><br>MA2158 /<br><br>MA2172 /<br><br>MA2177 /<br><br>MA2181 | Multi-variable Calculus and Linear Algebra<br><br>Linear Algebra and Calculus<br><br>Applied Statistics for Sciences and Engineering<br><br>Engineering Mathematics and Statistics<br><br>Mathematical Methods for Engineering | B2 | 3 | |
| MBE2016 | Engineering Graphics | B2 | 3 | |

**Electives (24 credit units)**

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| **Group A (Fundamental Electives): at least 12 credit units from this group of courses** | | | | |
| AP2105 | Engineering Mechanics: Dynamics | B2 | 3 | |
| AP3111 | Ceramic Processing and Microstructure Development | B3 | 3 | |
| AP3113 | Polymer Engineering | B3 | 3 | |
| AP3114 | Computational Methods for Physicists and Materials Engineers | B3 | 3 | |
| AP3130 | Biomaterials | B3 | 3 | |
| AP4170 | Environmental Degradation | B4 | 3 | |
| **Group B (Specialized Electives)** | | | | |
| AP4114 | Stress Analysis | B4 | 3 | |
| AP4118 | Composite Materials – with An Introduction to Nanocomposites | B4 | 3 | |

| | | | | |
|---|---|---|---|---|
| AP4121 | Thin Film Technology and Nanocrystalline Coatings | B4 | 3 | |
| AP4124 | Failure Analysis and Case Studies | B4 | 3 | |
| AP4126 | Electroceramics | B4 | 3 | |
| AP4127 | Smart Sensors: From Engineering to Applications | B4 | 3 | |
| AP4171 | Electronic Packaging and Materials | B4 | 3 | |
| AP4172 | Simulation and Modelling in Multidisciplinary Sciences | B4 | 3 | |
| AP4175 | Advanced Technology in Biomedical Devices | B4 | 3 | |
| AP4176 | Energy Materials for the Current Century | B4 | 3 | |
| AP4177 | Smart and Functional Materials: Selection and Application | B4 | 3 | |
| AP4178 | Nanostructures & Nanotechnology | B4 | 3 | |
| AP4280 | Advanced Optics Laboratory | B4 | 3 | |
| AP4307 | Building Materials | B4 | 3 | |
| AP4714 | Special Topics in Materials Science and Engineering | B4 | 3 | |
| FS4002 | Industrial Attachment Scheme | B3 | 3 | |

For course details, please refer to ARRO website (http://www.cityu.edu.hk/ug/current/catalogue/catalogue_UC.htm?page=B/B_course_AP.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 Engineering has been provisionally 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 2 (2016/17)***

| **Semester A** | **Semester B** | **Summer** |
|---|---|---|
| AP2102 Introduction to Materials Engineering | AP3110 Deformation and Fracture | AP2243 Workshop Practice |
| AP2104 Mechanics of Solids | AP3169 Materials Testing Techniques | |
| MA2001 Multi-variable Calculus and Linear Algebra / MA2158 Linear Algebra and Calculus / MA2172 Applied Statistics for Sciences and Engineering / MA2177 Engineering Mathematics and Statistics / MA2181 Mathematical Methods for Engineering | AP3172 Electronic Properties of Solids | |
| Free Elective 1 | MBE2016 Engineering Graphics | |
| Any Gateway Education Course (3 CU) | Free Elective 2 | |
| **Total: 15 CU** | **Total: 15 CU** | **Total: 3 CU** |

***Year 3 (2017/18)***

| **Semester A** | **Semester B** | **Summer** |
|---|---|---|
| AP3171 Materials Characterization Techniques | AP3109 Kinetic Processes in Engineering Materials | FS4002 (elective B4) Industrial Attachment Scheme # |
| AP3190 Thermodynamics of Materials | AP3244 Design Laboratory | |
| Elective A1 | Elective A3 | |
| Elective A2 | Elective A4 | |
| Gateway Education Course (3 CU) | Free Elective 3 | |
| **Total: 15 CU** | **Total: 15 CU** | **Total: 0 or 3 CU** |

# FS4002 can be considered as elective B4

***Year 4 (2018/19)***

| **Semester A** | **Semester B** |
|---|---|
| AP4116 Dissertation | AP4116 Dissertation |
| AP4101 Materials Engineers in Society | Elective B3 |
| Elective B1 | Elective B4 |
| Elective B2 | |
| Gateway Education Course (3 CU) | |
| **Total: 15 CU** | **Total: 9 or 6 CU** |

*On top of the above 75 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 9 credits Free Electives.*

**For Advanced Standing I Students**

***Year 2 (2016/17)***

| **Semester A** | **Semester B** | **Summer** |
|---|---|---|
| AP1201 General Physics I * | AP1202 General Physics II | AP2243 Workshop Practice |
| AP2102 Introduction to Materials Engineering | AP1203 General Physics III | |
| BCH1100 Chemistry * | AP3169 Materials Testing Techniques | |
| CS1102 Introduction to Computer Studies / CS1302 Introduction to Computer Programming | MA2001 Multi-variable Calculus and Linear Algebra / MA2158 Linear Algebra and Calculus / MA2172 Applied Statistics for Sciences and Engineering / MA2177 Engineering Mathematics and Statistics / | |
| MA1200 Calculus and Basic Linear Algebra I * | | |

| | | |
|---|---|---|
| | MA2181 Mathematical Methods for Engineering | |
| MA1201 Calculus and Basic Linear Algebra II / MA1301 Enhanced Calculus and Linear Algebra II | MBE2016 Engineering Graphics | |
| Gateway Education Course (3 CU) | | |
| **Total: 12 CU** | **Total: 15 CU** | **Total: 3 CU** |

*Optional for students who would like to strengthen their background

***Year 3 (2017/18)***

| **Semester A** | **Semester B** | **Summer** |
|---|---|---|
| AP2104 Mechanics of Solids | AP3109 Kinetic Processes in Engineering Materials | FS4002 (elective B4) Industrial Attachment Scheme # |
| AP3171 Materials Characterization Techniques | AP3110 Deformation and Fracture | |
| AP3190 Thermodynamics of Materials | AP3172 Electronic Properties of Solids | |
| Elective A1 | AP3244 Design Laboratory | |
| Elective A2 | Elective A3 | |
| Gateway Education Course (3 CU) | Elective A4 | |
| **Total: 18 CU** | **Total: 18 CU** | **Total: 0 or 3 CU** |

# FS4002 can be considered as elective B4

***Year 4 (2018/19)***

| **Semester A** | **Semester B** |
|---|---|
| AP4116 Dissertation | AP4116 Dissertation |
| AP4101 Materials Engineers in Society | Elective B3 |
| Elective B1 | Elective B4 |
| Elective B2 | Gateway Education Course (3 CU) |
| Gateway Education Course (3 CU) | |
| Gateway Education Course (3 CU) | |
| **Total: 18 CU** | **Total: 12 or 9 CU** |

*On top of the above 75 required credits in major requirement, students have to satisfy the degree requirement of 21 credits in Gateway Education as specified by the University.*

**For Advanced Standing II Students**

***Year 3 (2016/17)***

| **Semester A** | **Semester B** | **Summer** |
|---|---|---|
| AP2102 Introduction to Materials Engineering | AP1202 General Physics II * | AP2243 Workshop Practice |
| AP2104 Mechanics of Solids | AP1203 General Physics III * | Gateway Education Course (3 CU) |
| AP3171 Materials Characterization Techniques | AP3109 Kinetic Processes in Engineering Materials | |
| AP3190 Thermodynamics of Materials | AP3110 Deformation and Fracture | |
| AP1201 General Physics I * | AP3169 Materials Testing Techniques | |
| | AP3172 Electronic Properties of Solids | |
| MA1200 Calculus and Basic Linear Algebra I * | CS1102 Introduction to Computer Studies / CS1302 Introduction to Computer Programming * | |
| MA1201 Calculus and Basic Linear Algebra II * | | |
| Gateway Education Course (3 CU) | MA2158 Linear Algebra and Calculus / MA2001 Multi-variable Calculus and Linear Algebra / MA2172 Applied Statistics for Sciences and Engineering / MA2177 Engineering Mathematics and Statistics / MA2181 Mathematical Methods for Engineering | |
| | MBE2016 Engineering Graphics | |
| | Gateway Education Course (3 CU) | |
| **Total: 15 CU** | **Total: 21 CU** | **Total: 6 CU** |

*Optional for students who would like to strengthen their background

***Year 4 (2017/18)***

| **Semester A** | **Semester B** | **Summer** |
|---|---|---|
| AP4101 Materials Engineers in Society | AP3244 Design Laboratory | FS4002 (elective B4) Industrial Attachment Scheme # |
| AP4116 Dissertation | AP4116 Dissertation | |
| Elective A1 | Elective A3 | |
| Elective A2 | Elective A4 | |
| Elective B1 | Elective B4 | |
| Elective B2 | Gateway Education Course (3 CU) | |
| Elective B3 | | |
| | | |
| **Total: 21 CU** | **Total: 18 or 15 CU** | **Total: 0 or 3 CU** |

* FS4002 can be considered as elective B4

*On top of the above 69 required credits in major requirement, students have to satisfy the degree requirement of 12 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 more details and most updated information, please always refer to the website of Academic Regulations and Records Office (ARRO) (http://www6.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 an online tutorial 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 jeopardizes the integrity of the learning and assessment process may be charged with a Major Offence and be liable to disciplinary action.

For details of the rules on Academic Honesty, students should refer to the website of Office of the Provost (http://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 course, 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.

Students should check the updated minimum passing mark for specific courses under the section of "Programmes and Courses" of the ARRO's website (http://www6.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

The various classifications are based on the CGPAs*. The general guidelines are as follows:

| Classification of Award | CGPA |
|---|---|
| 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 |

*Please refer to the AP department website (http://www.ap.cityu.edu.hk/index.aspx?id=20061212175308&lang=e) for the calculation of SGPA and CGPA.

### 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 1.00 for two consecutive 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 two 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 "Regulations & Guidelines" (http://www6.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

All laboratory users 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 AP 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. Form can be downloaded from https://www.ap.cityu.edu.hk/overnight.pdf.
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 and obtain approval from your supervisor . Risk Assessment Form can be downloaded from https://www.ap.cityu.edu.hk/safety/risk-assessment.pdf.
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.

For further details of safety guidelines, please refer to the AP department website (http://www.ap.cityu.edu.hk/index.aspx?id=20061214155729&lang=e).

## 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.

## 10.1 Major Leader

**Major Leader**
**Dr JOHNNY HO**
Office: G6754, 6/F, Academic 1 (Green Zone)
Phone: 34424897
Email: johnnyho@cityu.edu.hk

## 11. Useful information

### 11.1 Course registration for 2015-16

- For 2016-17, students will be pre-registered in some of the core courses including AP1202, AP1203, AP2102, AP2212, AP3251, AP3290, AP4216/AP4217, MA1200, MA1201, MA2158, CS1102 and GE2401 in Semester A and AP2191, AP2213, AP3114, AP3202, AP3204, AP3205, AP3244 and AP3272 in Semester B.
- The web registration period for Semester A will start **from 15 August 2016 and end on 5 September 2016** but **you need to check your time ticket from "AIMS"**. For the exact registration period, Please refer to "Course Registration" under ARRO website (http://www6.cityu.edu.hk/arro/).
- 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 2016-2017, please refer to "Course Registration" under the ARRO website (http://www6.cityu.edu.hk/arro/).

### 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 get 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 OCIO's website.

### 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 | : | G6702, 6/F, Academic 1 (Green Zone) |
| Office Hours | : | Monday to Friday<br>8:30 am - 12:45 pm<br>2:00 pm - 5:45 pm |
| Telephone | : | (852) 3442 7831 |
| Fax | : | (852) 3442 0538 |
| Email | : | apoffice@cityu.edu.hk |
| Website | : | www.cityu.edu.hk/ap |

## 14. Appendix: Academic Staff Profile

| STAFF | AREAS OF SPECIALISM |
|---|---|
| *Head of Department and Chair Professor of Physics* | |
| **Prof X L Wang**<br>BSc *Peking University, China*<br>PhD *Iowa State University, USA*<br>Fellow, American Physical Society<br>Email : aphead@cityu.edu.hk<br>(for departmental matters)<br>xlwang@cityu.edu.hk | Neutron and synchrotron scattering<br>Phase transformation, deformation, magnetism, residual stress determination<br>Metallic glasses, nanostructured materials, magnetic shape memory alloys |
| *Personal Secretary*<br>**Ms Sare W Y Lau**<br>Email : sare.lau@cityu.edu.hk | |
| *Chair Professor of Materials Engineering* | |
| **Prof Paul K Chu**<br>BSc *The Ohio State University, USA*<br>MSc PhD *Cornell University, USA*<br>Fellow, American Vacuum Society<br>Fellow, Institute of Electrical and Electronics Engineers<br>Fellow, American Physical Society<br>Fellow, Materials Research Society<br>Fellow, Hong Kong Institution of Engineers<br>Email : paul.chu@cityu.edu.hk | Plasma science, implantation, processing and engineering<br>Semiconductor materials and processing<br>Biomedical materials and nanobiology<br>Advanced materials, functional thin films, and nanomaterials |
| *Chair Professors of Materials Science* | |
| **Prof Joseph K L Lai**<br>BA MA *Oxford University, UK*<br>PhD *City University, UK*<br>Fellow, Institute of Materials, Minerals and Mining, UK<br>Chartered Engineer, UK<br>Fellow, Institute of Physics, UK<br>Chartered Physicist, UK<br>Fellow, Institution of Mechanical Engineers, UK<br>Fellow, Hong Kong Institution of Engineers<br>Email : apjoelai@cityu.edu.hk | Properties of steels and aluminium<br>Failure analysis of engineering components<br>Temperature measurement<br>Expert witness on accident investigations<br>Litigations and arbitrations involving metals |

**Prof C S Lee**
BSc(Eng) PhD *University of Hong Kong*
Email : apcslee@cityu.edu.hk

Organic electronics
Nanoscaled materials
Solar cells and photodetectors

*Chair Professor of Photonics Materials*
**Prof Andrey L Rogach**
Diploma *Belarusian State University, Belarus*
PhD *Belarusian State University, Belarus*
Dr habil *Ludwig-Maximilians University, Munich, Germany*
Email : andrey.rogach@cityu.edu.hk

Nanoscience and nanotechnology
Advanced functional materials
Optical spectroscopy

*Professor and Associate Dean (CSE)*
**Prof Robert K Y Li**
BA BAI MA PhD *Dublin University, Ireland*
Email : aprkyl@cityu.edu.hk

Polymer engineering
Composite materials

*Professors*
**Prof K S Chan**
BSc PhD *University of Hong Kong*
Email : apkschan@cityu.edu.hk

Semiconductor physics
Photonics technology
Nanoscience and nanotechnology
Spintronics
Superconductivity

**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 S C Tjong**
BSc *National Taiwan University, Taiwan*
MSc PhD *University of Manchester, UK*
Chartered Engineer, UK
Chartered Scientist, UK
Fellow, Institute of Materials, Minerals and Mining, UK
Fellow, Hong Kong Institution of Engineers
Email : aptjong@cityu.edu.hk

Surface science
Electron microscopy
Polymer composites
Biomaterials
Nanostructured 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
Lead-free interconnections
Nano-materials for solar cells and biosensors

**Prof K M Yu**
BSc PhD *University of California, Berkeley, USA*
E-mail: kinmanyu@cityu.edu.hk

Ion Beam Analysis and Modification of Materials
Defects in Semiconductors
Photovoltaic Materials
Nitride and Oxide semiconductors
Transparent Conductors

**Prof Peter K N Yu**
BSc PhD *University of Hong Kong*
Chartered Scientist, UK
Chartered Physicist, UK
Fellow, Institute of Physics, UK
Chartered Radiation Protection Professional
Member, Society of Radiological Protection, UK
Fellow, Hong Kong Institution of Engineers
Email : peter.yu@cityu.edu.hk

Radiation biophysics
Medical physics
Biointerfaces

**Prof R Q Zhang**
BSc MSc PhD *Shandong University, China*
Email : aprqz@cityu.edu.hk

Surface, interface and microstructures of functional materials
Vapor-solid interactions
Computational materials science
Nanoscience

**Prof W J Zhang**
BSc MSc PhD *Lanzhou University, China*
Email : apwjzh@cityu.edu.hk

Surface and interface analysis
Thin films
Diamond and superhard materials
Nanomaterials

*Associate Professors*

**Dr S T Chu**
BSc *Wilfrid Laurier University, Canada*
MSc PhD *University of Waterloo, Canada*
Email : saitchu@cityue.edu.hk

Integrated photonics
Sensors and sensing systems
Numerical methods

**Dr 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

**Dr Johnny C Y Ho**
*BSc MSc PhD University of California, Berkeley, USA*
Email: johnnyho@cityu.edu.hk

Synthesis and characterization of nano-structured materials
Assembly and heterogeneous integration of nano-materials
Nano-scale devices and processing for technological applications (electronics, energy-harvesting, photonics, sensors)

**Dr Y Y Li**
BSc *Peking University, China*
MSc PhD *University of California, San Diego, USA*
Email : yangli@cityu.edu.hk

Electrochemical nanofabrication
Functional porous nanomaterials
Sensors
Electrode materials
Smart biomaterials

**Dr Antonio Ruotolo**
MEng PhD *University of Naples (IT) "Federico II", Italy*
Email : aruotolo@cityu.edu.hk

Magnetism and spintronics
Superconductivity
Semiconductor oxides
Thin film technology
Nano-lithography

**Dr A L Roy Vellaisamy**
BSc *St Xavier's College, India*
MSc *Loyola College, India*
PhD *Nagpur University, India*
Email : val.roy@cityu.edu.hk

Molecular electronics
Molecular self-assembly
Photonics
Nano-materials science
Bio-electronics
Renewable energy (solar and fuel cells) and printed electronics

**Dr J Antonio Zapien**
PhD *The Pennsylvania State University, USA*
BSc *UNAM, Mexico*
E-mail: apjazs@cityu.edu.hk

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

*Assistant Professors*

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

Theoretical and computational materials science and biophysics
Assembly molecular self-assembly
Structure, function and dynamics of cell membranes and proteins
Molecular dynamics simulations
Phase field modeling
Free energy calculations

**Dr Derek Ho**
M.A.Sc. B.A.Sc., *University of British Columbia, Canada*
Ph.D., *University of Toronto, Canada*
Member, *Institute of Electrical and Electronics Engineers (IEEE)*
Email: derekho@cityu.edu.hk

Smart arrayed sensors for optical, chemical, and electrical biosensing
Instruments for fluorescence spectroscopy, bioluminescence imaging, and lenseless microscopy
Fully-integrated lab-on-a-chips and microsystems
Electronics for implantable, wearable, and handheld medical diagnostics
CMOS circuits and systems for signal processing, control, and computation
Microelectronic, nanoelectronic, and optoelectronic devices

| | |
|---|---|
| **Dr Condon Lau**<br>BSE, *Princeton University, USA*<br>MSc PhD *Massachusetts Institute of Technology, USA*<br>Email : condon.lau@cityu.edu.hk | Optics<br>Nuclear magnetic resonance<br>Biophysics<br>Spectroscopy<br>Imaging |
| **Dr Suresh M Chathoth**<br>MSc *Andhra University, India*<br>MPhil *University of Madras, India*<br>MTech *National Institute of Technology Karnataka, India*<br>PhD *Technical University of Munich, Germany*<br>Email : smavilac@cityu.edu.hk | Neutron scattering<br>Dynamics of liquid in confinements<br>Energy storage<br>Glass transition |
| **Dr Stephen Tsang**<br>MPhil, BEng *The Chinese University of Hong Kong*<br>*PhD University of Toronto, Canada*<br>Email: saitsang@cityu.edu.hk | Advanced materials for photovoltaic application<br>Solution processed electronic materials<br>Semiconductor device physics<br>Spectroscopy techniques |
| **Dr Pramanick Abhijit**<br>BE, *National Institute of Technology, India*<br>ME, *Indian Institute of Science, India*<br>PhD, *University of Florida, USA*<br>Email: apramani@cityu.edu.hk | Ferroelectric and multiferroic materials<br>Ceramics<br>X-ray and neutron scattering |
| **Dr Feng Wang**<br>BEng PhD *Zhejiang University, China*<br>Email : wang.feng@cityu.edu.hk | Luminescent nanomaterials<br>Photon upconversion<br>Optical spectroscopy |
| **Dr Xin Wang**<br>BSc *Peking University, China*<br>MA, MPhil, PhD *Columbia University, USA*<br>Email: x.wang@cityu.edu.hk | Theoretical condensed matter physics<br>Spin quantum computation<br>Correlated electron system<br>Computational methods |
| **Dr Chunyi Zhi**<br>BSc *ShanDong University, China*<br>PhD *IOP, CAS, China*<br>Email : cy.zhi@cityu.edu.hk | BN/BCN nanomaterials<br>Thermally conductive electrically insulating polymer composites for heat dissipation<br>Energy related electrochemical & photoelectrochemical devices<br>Nanomaterials for sewage treatment |