College of Science 理學院
Department of Physics 物理學院

Department of Physics
香港城市大學
City University of Hong Kong

Bachelor of Science in Applied Physics
理學士（應用物理學）

Student Handbook
2019-2020

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August 2019

1. Aims of Major

This major is to provide Bachelor-level education to students with diverse backgrounds, to prepare them to pursue a career in areas such as environmental physics, optics, materials technology, and biomedical physics in the industrial, commercial, governmental or educational sectors. On completion of the major, graduates will be able to integrate knowledge learned in the major to support in at least an original discovery or creative design relevant to applied physics.

Intended Learning Outcomes of Major (MILOs)

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

No.	*MILOs*	*Discovery-enriched curriculum related learning outcomes*		
		A1	*A2*	*A3*
1.	Apply knowledge of mathematics, physics, and engineering appropriate to the degree in Physics (with the focus on one or more of the areas in applied physics: environmental physics, optics, materials technology, and biomedical physics). This includes: (a) to design a component, a process or a system to meet desired needs within realistic constraints. (b) to identify, formulate, and solve physics and engineering problems.	✓	✓	
2.	Design and conduct experiments, as well as analyze, interpret and present results.		✓	✓
3.	Use the techniques, skills, and modern Physics and engineering tools including computer/IT tools necessary for practices appropriate to the degree in Physics along with an understanding of their processes and limitations.		✓	✓
4.	Appreciate the impact of Physics and engineering applications in a global and societal context, especially the importance of health, safety and environmental considerations to both workers and the general public.	✓	✓	
5.	Appreciate professional and ethical responsibility.			
6.	Appreciate basic laws and principles of physics and to use this knowledge to explain everyday life examples and phenomena, to explain science to people not in the science and engineering discipline, and to educate the public in physics.	✓		
7.	Work in a multidisciplinary team.		✓	
8.	Communicate effectively.		✓	
9.	Recognize the need for, and to engage in life-long learning, including the ability to stay abreast of contemporary issues.	✓	✓	
10.	Create an original discovery or design that are motivated from the major of study.	✓	✓	✓

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	66/65^ credit units (Core: 45/48; 50/53^ Elective: 21/18; 15/12^)	66/65^ credit units (Core: 45/48; 50/53^; Elective: 21/18; 15/12^)	60/59^ credit units (Core: 39/42; 44/47^ Elective: 21/18; 15/12^)
Free electives / Minor (if applicable)	18/19^ credit units	3/4^ credit units	0/1^ credit unit
Minimum number of credit units required for the award	**120 credit units**	**90 credit units**	**72 credit units**
Maximum number of credit units permitted	**144 credit units**	**114 credit units**	**84 credit units**

^ *For students who are approved for taking the Enhanced Option of computation and maths courses.*

2.2. Gateway Education Requirement

For Normative 4-year students

Curriculum Catalogue Term	Semester A 2019/20
University requirements	
English	
• GE1401 University English	3 credit units
• GE2401 English for Science[#]	3 credit units
GE1501 Chinese Civilisation – History and Philosophy	3 credit units
Distributional requirements Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	12 credit units *(At least one course from each of the three areas)*
College/School-specified courses ^	9 credit units
Total	**30 credit units**

 # Student may choose to take GE2410 English for Engineering to fulfill the Discipline-specific English requirement, subject to the course vacancies. They will need to change the course on web during the add/drop period.

^ *College/School-specified courses:*

Course Code	Course Title	Level	Credit Units
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 2019/20**	
	Advanced Standing I	**Advanced Standing II (Senior-year Entry)**
University requirements		
English		
• GE1401 University English	3 credit units	Not a compulsory requirement
• GE2401 English for Science[#]	3 credit units	3 credit units
GE1501 Chinese Civilisation – History and Philosophy	3 credit units	Not a compulsory requirement
Distributional requirements Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	6 credit units *(From two different areas)*	3 credit units
College/School-specified courses ^	6 credit units	6 credit units
Total	**21 credit units**	**12 credit units**

 # Student may choose to take GE2410 English for Engineering to fulfill the Discipline-specific English requirement, subject to the course vacancies. They will need to change the course on web during the add/drop period.

^ College/School-specified courses:

Advanced Standing I				
Major in Applied Physics				
CS1102/ CS1302	Introduction to Computer Studies/ Introduction to Computer Programming	B1	3	Students taking *MSE3114 Computational Methods for Physicist and Materials Engineers (core course)* or *PHY4172 Computational Physics (elective course)* 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	Students may be considered for exemption subject to passing the placement test or recommendation of MA department. 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.
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

(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				
Physics				
PHY1201	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.

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.

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

2.6. Major Requirement

Core Courses

- Normative 4-year Degree (45 or 48 credit units; 50 or 53 credit units^)

- Advanced Standing I (45 or 48 credit units; 50 or 53 credit units^)

- Advanced Standing II (39 or 42 credits; 44 or 47 credit units^)

Course Code	Course Title	Level	Credit Units	Remarks
PHY1202	General Physics II	B1	3	Advanced Standing I and II Students with acceptable qualifications may apply for exemption on a case by case basis. They are required to complete any 3 CU course to replace the exempted credits.
PHY1203	General Physics III	B1	3	Advanced Standing I and II Students with acceptable qualifications may apply for exemption on a case by case basis. They are required to complete any 3 CU course to replace the exempted credits.
PHY2191	Electricity and Magnetism	B2	3	
PHY2212	Measurement and Instrumentation	B2	3	Advanced Standing II students are not required to take this course.
PHY2213	Advanced Measurement and Instrumentation	B2	3	Advanced Standing II students are not required to take this course.
PHY3202	Modern Physics	B3	3	
PHY3204	Waves and Optics	B3	3	
PHY3205	Electromagnetism	B3	3	
PHY3231	Advanced Instrumentation Lab	B3	3	
PHY3251	Quantum Physics	B3	3	
PHY3272	Introduction to Solid State Physics	B3	3	
PHY3290	Thermodynamics	B3	3	
PHY4216/ PHY4217/ FS4003	Project/ Dissertation/ CES Placement Project	B4	3/ 6/ 6	- Students taking *PHY4216 Project* are required to take 3 more credits of elective course. - *FS4003 CES Placement Project* (6 CUs) can be used to replace *PHY4217 Dissertation* (6 CUs). Students taking FS4003 are required to take FS4001 simultaneously offered by the Co-operative Education Centre.

Select ONE from the following blocks of computation and maths courses:

Ordinary Option

Course Code	Course Title	Level	Credit Units	Remarks
MSE3114	Computation Methods for Physicists and Materials Engineers	B3	3	
MA2158	Linear Algebra and Calculus	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 *MA2158 Linear Algebra and Calculus*. 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.

Enhanced Option

*(Students have to meet the specified criteria**and obtain the prior approval from the Department for taking this option.)*

Course Code	Course Title	Level	Credit Units	Remarks
MA2503	Linear Algebra	B2	4	
MA2508	Multi-variable Calculus	B2	4	
MA3511	Ordinary Differential Equations	B3	3	

** *Eligibliity for the Enhanced Option:*

Normative 4-year Degree

(1) Students who plan to pursue the Joint Bachelor's Degree Program between CityU and ColumbiaU **OR**

(2) Students who obtained *Grade B+ or above for MA1301 Enhanced Calculus & Linear Algebra II* or *Grade A- or above for MA1201 Calculus & Linear Algebra II*.

Advanced Standing Students

(1) Students who obtained *Grade B+ or above for MA1301 Enhanced Calculus & Linear Algebra II* or *Grade A- or above for MA1201 Calculus & Linear Algebra II* **OR**

(2) Students who passed 85% of the combined MA Placement test for MA1200 Calculus & Basic Linear Algebra I and MA1201 Calculus & Basic Linear Algebra II.

^*For students who are approved for taking the Enhanced Option of computation and maths courses.*

Electives

- Normative 4-year Degree (21 or 18 credit units; 15 or 12 credit units^)

- Advanced Standing I (21 or 18 credit units; 15 or 12 credit units^)

- Advanced Standing II (21 or 18 credit units; 15 or 12 credit units^)

Course Code	Course Title	Level	Credit Units	Remarks
MSE2102	Introduction to Materials Engineering	B2	3	
MSE3171	Materials Characterization Techniques	B3	3	
MSE4121	Thin Film Technology and Nanocrystalline Coatings	B4	3	
MSE4127	Smart Sensors: From Engineering to Applications	B4	3	
PHY4172	Computational Physics	B4	3	
PHY4230	Radiation Safety	B4	3	
PHY4232	Radiotherapy Physics	B4	3	
PHY4233	Imaging Physics	B4	3	
PHY4254	Fundamentals of Laser Optics	B4	3	
PHY4255	Optoelectronic Devices and Systems	B4	3	
PHY4265	Semiconductor Physics and Devices	B4	3	
PHY4273	Special Topics in Physics	B4	3	
PHY4274	Radiation Biophysics	B4	3	
PHY4275	Radiological Physics and Dosimetry	B4	3	
PHY4283	Physics in Medicine	B4	3	

^ *For students who are approved for taking the Enhanced Option of computation and maths courses.*

For course details, please refer to the ARRO website (http://www.cityu.edu.hk/catalogue/ug/current/catalogue/catalogue_UC.htm?page=B/B_course_index.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. 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 have to register them on web during the add/drop period.

4. Students wishing to drop/change a pre-assigned course have 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 they may not be able to enroll the pre-assigned course again.

3.1. For Normative 4 Year Degree Students

Year 1

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY1201	**3**	**PHY1202**	**3**		
MA1200 or MA1300	**3**	**PHY1203**	**3**		
GE1401 or EL0200A	**3**	**CS1102**	**3**	☒Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning	
GE1501	**3**	**MA1201 or MA1301**	**3**		
GE Course	**3**	**GE2401^ or EL0200B**	**3**		
☐Go Global - Exchange ☐Go Global - Internship ☐Go Global - Learning Abroad ☒Go Global - Service Learning		☐Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Year 2

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY2191	**3**	**PHY2213**	**3**		
PHY2212	**3**	**PHY3202**	**3**		
MA2158	**3**	**PHY3204**	**3**	☒Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning	
GE Courses	**6**	**BCH1100**	**3**		
		MSE3114	**3**		
☒Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning		☒Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Year 3

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY3231	**3**	**PHY3205**	**3**		
PHY3251	**3**	**PHY3272**	**3**		
PHY3290	**3**	**Free Electives**	**9**		
GE Course	**3**			☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning	
Free Electives	**3**				
☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning		☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Year 4

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY4216 or PHY4217	**3**	**PHY4217 or FS4003#**	**3 or 6#**		
Major Electives	**12**	**Major Electives**	**6 or 9≠**		
		Free Electives	**6**	☐Go Global - Exchange ☐Go Global - Internship ☐Go Global - Learning Abroad ☐Go Global - Service Learning	
☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning		☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Please refer to the details of the Go Global program for eligibility of joining the program concerned.

^ Student may choose to take GE2410 English for Engineering to fulfill the Discipline-specific English requirement, subject to the course vacancies. They will need to change the course on web during the add/drop period.

Year 4 students who take FS4003 CES Placement Project (6CUs) in Semester B need to continue their studies in the following Summer Term and Semester A. They are also required to take FS4001 Co-operative Education Scheme (CES) simultaneously.

≠ Year 4 students need to take 9 CUs for major elective courses in Semester B if they select PHY4216 Project (3CUs) in Semester A.

3.2. For Advanced Standing I Students

Year 2

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
CS1102	**3**	**PHY1202**	**3**		
MA1201	**3**	**PHY1203**	**3**		
GE1501	**3**	**PHY3202**	**3**	☒Go Global - Exchange ☐ Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning	
GE1401 or EL0200A	**3**	**PHY3204**	**3**		
GE Course	**3**	**GE2401^ or EL0200B**	**3**		
☐Go Global - Exchange ☐Go Global - Internship ☐Go Global - Learning Abroad ☒Go Global - Service Learning		☐Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Year 3

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY2191	**3**	**PHY2213**	**3**		
PHY2212	**3**	**PHY3205**	**3**		
PHY3231	**3**	**PHY3272**	**3**		
PHY3251	**3**	**MSE3114**	**3**	☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning	
PHY3290	**3**				
MA2158	**3**				
☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning		☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Year 4

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY4216 or PHY4217	**3**	**PHY4217 or FS4003#**	**3 or 6#**		
Major Electives	**12**	**Major Electives**	**6 or 9≠**		
		Free Electives	**3**	☐Go Global - Exchange ☐Go Global - Internship ☐Go Global - Learning Abroad ☐Go Global - Service Learning	
		GE course	**3**		
☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning		☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Please refer to the details of the Go Global program for eligibility of joining the program concerned.

^ Student may choose to take GE2410 English for Engineering to fulfill the Discipline-specific English requirement, subject to the course vacancies. They will need to change the course on web during the add/drop period.

Year 4 students who take FS4003 CES Placement Project (6CUs) in Semester B need to continue their studies in the following Summer Term and Semester A. They are also required to take FS4001 Co-operative Education Scheme (CES) simultaneously.

≠ Year 4 students need to take 9 CUs for major elective courses in Semester B if they select PHY4216 Project (3CUs) in Semester A.

3.3. For Advanced Standing II Students

Year 3

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY3231	**3**	**PHY1202**	**3**		
MA2158	**3**	**PHY1203**	**3**		
Major Electives	**6**	**PHY3202**	**3**	☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning	
GE courses	**6**	**PHY3204**	**3**		
		MSE3114	**3**		
		GE2401^	**3**		
☐Go Global - Exchange ☐Go Global - Internship ☐Go Global - Learning Abroad ☒Go Global - Service Learning		☐Go Global - Exchange ☐Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Year 4

Semester A		Semester B		Summer Term	
Course Code	**CUs**	**Course Code**	**CUs**	**Course Code**	**CUs**
PHY2191	**3**	**PHY3205**	**3**		
PHY3251	**3**	**PHY3272**	**3**		
PHY3290	**3**	**PHY4217 or FS4003#**	**3 or 6#**		
PHY4216 or PHY4217	**3**	**Major Electives**	**9 or 12≠**	☐Go Global - Exchange ☐Go Global - Internship ☐Go Global - Learning Abroad ☐Go Global - Service Learning	
Major Electives	**3**				
GE course	**3**				
☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning		☒Go Global - Exchange ☒Go Global - Internship ☒Go Global - Learning Abroad ☒Go Global - Service Learning			

Please refer to the details of the Go Global program for eligibility of joining the program concerned.

^ Student may choose to take GE2410 English for Engineering to fulfill the Discipline-specific English requirement, subject to the course vacancies. They will need to change the course on web during the add/drop period.

Year 4 students who take FS4003 CES Placement Project (6CUs) in Semester B need to continue their studies in the following Summer Term and Semester A. They are also required to take FS4001 Co-operative Education Scheme (CES) simultaneously.

≠Year 4 students need to take 12 CUs for major elective courses in Semester B if they select PHY4216 Project (3CUs) in Semester A.

4. Academic Regulations

Students should observe the University's Academic Regulations for 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) (http://www.cityu.edu.hk/arro/content.asp?cid=405).

5. 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).

6. 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 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.

Students should check the updated minimum passing mark required for different courses under the section of "Programmes and Courses" of the ARRO's website (www.cityu.edu.hk/arro).

6.1. Mitigation

A student who reasonably 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.**

6.2. 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

6.3. 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 "Current Students"→"Regulations & Guidelines" (www.cityu.edu.hk/arro).

7. 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.

8. Laboratory safety

Students **under 18** MUST read the Information and complete the "Parental Consent Form for Students under the Age of 18" (https://www.cityu.edu.hk/phy_portal/download/6_UsefulForms/Parental%20Consent%20Form.pdf) 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 Physics (G6702, Green Zone, 6/F, Yeung Kin Man Academic Building) **by 9 September 2019**.

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 PHY 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.cityu.edu.hk/phy/students/Safety%20in%20Laboratories.
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.cityu.edu.hk/phy/students/Safety%20in%20Laboratories.
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 PHY department website (https://www.cityu.edu.hk/phy/students/Safety%20in%20Laboratories).

9. Communication Channels

There are various channels of communication between students and the Department. On an informal basis, students having academic difficulties are encouraged to approach their academic advisors, course leaders or tutors 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 K S CHAN

Office: G6708, Green Zone, 6/F, Yeung Kin Man Academic Building

Phone: 3442 7814

Email: apkschan@cityu.edu.hk

Deputy Major Leader

Dr W C YU

Office: G6709, Green Zone, 6/F, Yeung Kin Man Academic Building

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Academic Advisors

Prof Wei BAO
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Dr Shubo WANG
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Dr W C YU
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Phone: 3442 7702
Email: wingcyu@cityu.edu.hk

Prof R Q ZHANG
Office: G6719, Green Zone, 6/F, Yeung Kin Man Academic Building
Phone: 3442 7849
Email: aprqz@cityu.edu.hk

10. Useful information

10.1. Course registration for 2019-20

- For 2019-20, students will be pre-registered in some of the required courses in both Semester A and B. Please refer to Part 4: Recommended Study Plan for details.
- The web registration period for Semester A will start **from 19 August 2019 and end on 9 September 2019** but **you need to check your time ticket from "AIMS"**. For details on course registration, please refer to "Course Registration" under ARRO website (www.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 CityU home page (www.cityu.edu.hk) and click "Students".
- Log onto "AIMS" and then click "Course Registration".
- Choose "Add or Drop Classes".

For details on course registration arrangements for 2019-2020, please refer to "Course Registration" under the ARRO website (www.cityu.edu.hk/arro).

10.2. How to access your personal class schedule

- Go to CityU home page (www.cityu.edu.hk).
- 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.
- Click the "View Detail Schedule" button at the bottom of your timetable to display details of your class schedule.

10.3. How to get instructors' handouts through Canvas

- Go to CityU home page (www.cityu.edu.hk).
- Log onto "Canvas" under "Quick Links".
- Click "Courses" to see all the courses you have registered in current and previous semesters.

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).

10.4. How to check curriculum requirements and course syllabuses

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

10.5. How to access your student email account

- Go to CityU home page (www.cityu.edu.hk).
- Click "Email" under "My CityU"
- Click "@my.cityu.edu.hk (office 365)"

**For email communication, please state your full name, student number, contact telephone number and programme.*
**Always check and clear your email account, and make sure it does not exceed the quota (a maximum of 25GB).*

10.6. How to access DegreeWorks

DegreeWorks is a web-based academic advising and degree audit tool for undergraduate students. It 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 CityU home page (www.cityu.edu.hk).
- 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 the ARRO home page (www.cityu.edu.hk/arro).
- Click "Current Students".
- Choose "DegreeWorks".
- Read "Introduction", "Tutorials" and "Frequently Asked Questions".

11. Student Development Services (SDS)

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

- Counselling Services
  - Psychological Counselling
  - Personal Development
  - Special Educational Needs (SEN)
- PE & Sports
- Financial Assistance
- Scholarships
- Career & Leadership

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

12. Administrative Support from General Office

Address	:	G6702, Green Zone, 6/F, Yeung Kin Man Academic Building
Office Hours	:	Monday to Friday 8:30 am - 12:45 pm 2:00 pm - 5:45 pm
Telephone	:	(852) 3442 7831
Fax	:	(852) 3442 0538
Email	:	phy.go@cityu.edu.hk
Website	:	www.cityu.edu.hk/phy

13. Appendix: Academic Staff Profile

STAFF	AREAS OF SPECIALISM
Head of Department of Physics and Chair Professor of Physics **Prof X L Wang** BSc *Peking University, China* PhD *Iowa State University, USA* Fellow, American Physical Society Email : phy.head@cityu.edu.hk (for departmental matters) xlwang@cityu.edu.hk	Neutron and synchrotron scattering Phase transformation, deformation, magnetism, residual stress determination Metallic glasses, nanostructured materials, magnetic shape memory alloys
Personal Secretary **Ms Sare W Y Lau** Email : sare.lau@cityu.edu.hk	
Associate Dean (Research) of College of Science and Chair Professor of Physics **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
Associate Head and Professor **Prof K S Chan** BSc PhD *University of Hong Kong* Email : apkschan@cityu.edu.hk	Semiconductor physics Photonics technology Nanoscience and nanotechnology Spintronics Superconductivity
Chair Professor of Physics **Prof Wei Bao** BSc *Peking University* PhD *Johns Hopkins University* E-mail: weibao@cityu.edu.hk	Superconductivity Quantum Magnetism Strongly correlated systems Neutron scattering

Chair Professor of Materials Engineering

Prof Paul K Chu
BSc *The Ohio State University, USA*
MSc PhD *Cornell University, USA*
Fellow, American Vacuum Society
Fellow, Institute of Electrical and Electronics Engineers
Fellow, American Physical Society
Fellow, Materials Research Society
Fellow, Hong Kong Institution of Engineers
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

Professors

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

Associate Professor

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

Assistant Professors

Dr Ivan V Borzenets
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BS *University of California, Berkeley, USA*
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Condensed matter experiment
Nano-hybrid quantum systems
Graphen/Superconductor hybrid systems
Nanomaterials

Dr Liang Dai
BSc *University of Science and Technology of China, China*
PhD *National University of Singapore, Singapore*

Computational soft matter and biophysics
Polymer knots
Interactions between antimicrobial peptides and cell membranes
Nanopore translocation of DNA
Effects caused by macromolecular crowding

Dr Condon Lau
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MSc PhD *Massachusetts Institute of Technology, USA*
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Optics
Nuclear magnetic resonance
Biophysics
Spectroscopy
Imaging

Dr Xiao Li
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Theoretical and Computational Physics
Low-dimensional systems

Dr Qi Liu
BSc, MSc *Hunan University, China*
PhD *Purdue University, USA*
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Neutron and Synchrotron X-ray Scattering
Energy Storage and conversion
Battery materials
Phase transition

Dr S B Wang
BSc *Shandong University, China*
PhD *The Hong Kong University of Science and Technology*
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Plasmonics
Metamaterials
Photonic crystals
Opto-mechanics
Computational electrodynamics

Dr Xin Wang
BSc *Peking University, China*
MA, MPhil, PhD *Columbia University, USA*
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Theoretical condensed matter physics
Spin quantum computation
Correlated electron system
Computational methods

Dr W C Yu
BSc *CUHK*
PhD *CUHK*
Email: wingcyu@cityu.edu.hk

Computational and theoretical condensed matter physics