

## Curriculum for BSc in Applied Physics - Science and Technology Option

Two options are offered for this program. One is **Management Science Option** and the other is **Science and Technology Option**. Two sequences of courses are offered for each program option: Sequence A for students with AL Physics but without AL Mathematics and Sequence B for those with AL Physics and AL Mathematics. For students who fall outside the above categories, please consult the academic advisor.

### Major Program Requirements

#### Core courses

(1)	PHYS 121	Fundamentals of Physics	[3-1-2:4]
	PHYS 126	Introduction to Modern Physics	[3-1-0:3]
	PHYS 221	Intermediate Classical Mechanics	[3-1-0:4]
	PHYS 223	Intermediate Electricity and Magnetism I	[3-1-0:4]
	PHYS 234	Elementary Quantum Mechanics I	[3-1-0:4]

#### Required courses

	PHYS 127	Introduction to Modern Physics Laboratory	[0-0-3:1]
	PHYS 180	Physics Seminar and Tutorial I	[0-1-0:1]
	PHYS 211	Experimental Physics	[1-0-3:2]
	PHYS 280	Physics Seminar and Tutorial II	[0-1-0:1]
	PHYS 321	Thermodynamics and Statistical Physics	[4-0-0:4]
	PHYS 380	Physics Seminar and Tutorial III	[0-1-0:1]
(2)	PHYS 311	Advanced Experimental Physics	[1-0-6:3]
(3)	COMP 102	Computer and Programming Fundamentals I	[3-0-2:3]
	MATH 101	Multivariable Calculus	[3-1-0:4]
(4)	MATH 111	Linear Algebra	[3-1-0:4]
	MATH 151	Differential Equations and Applications	[3-1-0:4]

#### For Sequence A:

	MATH 021	Concise Calculus	[3-1-0:4]
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#### Elective courses

Elective types		Minimum no. of courses	Minimum total credits
(5) APHY	Applied Physics Elective	2	12
(6) PHYS	Physics Elective	1	
(7) FREE	Free Elective		
	For Sequence A	5	18
	For Sequence B	6	21

### General Education Requirements

Electives must be selected from amongst those general education courses that are listed under the section "Designated General Education Courses for Undergraduate Students".

Elective types		Minimum no. of courses	Minimum total credits
GEE(ENGG)	Engineering General Education Elective	1	6
GEE(SB&M)	Business and Management General Education Elective	1	
(8) GEE(H&SS)	Humanities and Social Science General Education Elective	4	12

### Required Courses in English Communication

LANG 108	English for Science Students	[0-2-0:2]
LANG 208	English Communication for Science Students I	[0-2-0:1]
LANG 209	English Communication for Science Students II	[0-2-0:1]
LANG 308	English Communication for Science Students III	[0-2-0:1]

### Other Requirement

(9) HLTH 001	Healthy Life Style	[0 credit]
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#### Notes:

- (1) With the Department's recommendation, students can replace PHYS 121 by PHYS 111 under the condition that they complete PHYS 112 as well. Under this special arrangement, PHYS 112 can be counted as a free elective.
- (2) The course PHYS 311 can be replaced by PHYS 382. Students who plan to take PHYS 382 as the required course are reminded to take PHYS 381 and PHYS 214 first.
- (3) The course COMP 102 can be replaced by COMP 104.
- (4) The course MATH 111 can be replaced by MATH 111H.
- (5) Applied Physics Elective courses have to be chosen from the following courses: PHYS 241, PHYS 242, PHYS 250, PHYS 251, PHYS 335, PHYS 351, PHYS 381.
- (6) Physics Elective must be at 200-level or higher, with the exception of PHYS 191; and at least one of them must be a 3 or 4 credit course at 300-level or higher.
- (7) Students are not permitted to take more than eight credits of 000-level courses as free elective. Free electives must be at 200-level or higher if Physics courses are chosen, with the exception of PHYS 140 and PHYS 191.
- (8) Of these courses, at least one course in Humanities and one in Social Science are required.
- (9) Students are required to take and pass this course in their first year of study. Details of the course and its requirements are announced on the course website <http://www.ab.ust.hk/sao/HLTH001> managed by the Student Affairs Office.

A minimum of 103 credits is required for the BSc program in Applied Physics - Science and Technology Option. Students must take additional course(s) and/or elective(s) of higher-than-required credit value to meet this minimum total of 103 credits. These additional course(s) and/or elective(s) must be at 100-level or above.

### Recommended Pattern of Study for BSc in Applied Physics - Science and Technology Option - Sequence A

1st year	Fall	C	PHYS 121	(Total: 14 credits)
		R	PHYS 180, HLTH 001, LANG 108, MATH 021	
		E	GEE(ENGG), GEE(H&SS)	
Spring	Spring	C	PHYS 126	(Total: 18* credits)
		R	PHYS 127, PHYS 180, COMP 102, HLTH 001, LANG 108, MATH 101, MATH 111	

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	Summer	R	MATH 151	(Total: 4 credits)
2nd year	Fall	C	PHYS 221, PHYS 223	
		R	PHYS 211, PHYS 280, LANG 208	
		E	APHY/PHYS, GEE(H&SS)	(Total: 17 credits)
	Spring	C	PHYS 234	
		R	PHYS 280, LANG 209	
		E	APHY/PHYS, GEE(SB&M), GEE(H&SS), one or two FREE	(Total: 19* credits)
3rd year	Fall	R	PHYS 311, PHYS 321, PHYS 380, LANG 308	
		E	APHY/PHYS, GEE(H&SS), FREE	(Total: 16 credits)
	Spring	R	PHYS 380	
		E	two APHY/PHYS, three FREE	(Total: 15* credits)

\* LANG 108, PHYS 180, PHYS 280 and PHYS 380 are two-semester courses. The course credit(s) will be earned on completion of the courses at the end of the respective Spring Semester.

C = core course; R = required course; E = elective course

**Recommended Pattern of Study for BSc in Applied Physics - Science and Technology Option - Sequence B**

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1st year	Fall	C	PHYS 121	
		R	PHYS 180, HLTH 001, LANG 108, MATH 101, MATH 111	
		E	GEE(ENGG)	(Total: 15 credits)
	Spring	C	PHYS 126	
		R	PHYS 127, PHYS 180, COMP 102, HLTH 001, LANG 108, MATH 151	
		E	GEE(H&SS)	(Total: 17* credits)
2nd year	Fall	C	PHYS 221, PHYS 223	
		R	PHYS 211, PHYS 280, LANG 208	
		E	APHY/PHYS, GEE(H&SS)	(Total: 17 credits)
	Spring	C	PHYS 234	
		R	PHYS 280, LANG 209	
		E	APHY/PHYS, GEE(SB&M), GEE(H&SS) one or two FREE	(Total: 19* credits)
3rd year	Fall	R	PHYS 311, PHYS 321, PHYS 380, LANG 308	
		E	APHY/PHYS, GEE(H&SS), two FREE	(Total: 20 credits)
	Spring	R	PHYS 380	
		E	two APHY/PHYS, three FREE	(Total: 15* credits)

\* LANG 108, PHYS 180, PHYS 280 and PHYS 380 are two-semester courses. The course credit(s) will be earned on completion of the courses at the end of the respective Spring Semester.

C = core course; R = required course; E = elective course