Curriculum for BSc in Mathematics - Mathematics and Physics Option

Major Program Requirements

Core courses

	MATH	101	Multivariable Calculus	[3-1-0:4]
	MATH	111	Linear Algebra	[3-1-0:4]
	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

	MATH	151	Differential Equations and Applications	[3-1-0:4]
	MATH	201	Introduction to Analysis	[3-1-0:4]
(1)	MATH	301	Real Analysis	[3-1-0:4]
(2)	MATH	304	Complex Analysis	[3-1-0:4]
	MATH	306	Partial Differential Equations	[3-1-0:4]
	PHYS	127	Introduction to Modern Physics Laboratory	[0-0-3:1]
	PHYS	321	Thermodynamics and Statistical Physics	[4-0-0:4]
(3)	PHYS	331	Elementary Quantum Mechanics II	[4-0-0:4]

Elective courses

	Elective types		Minimum no. of courses	Minimum total credits
(4)	MATH	Mathematics Elective	3	12
(5)	FREE	Free Elective	4	13 or 14

General Education Requirements

Electives must be selected from amongst those general education courses that are listed under the section “Designated General Education Courses”.

	Elective types		Minimum no. of courses	Minimum total credits
	GEE(ENGG)	Engineering General Education Elective	1	
(5)	GEE(SB&M)	Business and Management General Education Elective	1	6
(6)	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

(7)	HLTH	001	Healthy Life Style	[0 credit]

Notes:

(1) MATH 301 can be replaced by MATH 311 or MATH 321 provided that enrolment quota of these courses is available.

(2) MATH 304 can be replaced by MATH 321 provided that enrolment quota is available.

(3) PHYS 331 can be replaced by PHYS 224 provided that enrolment quota is available.

(4) For Mathematics elective courses, one must be of 200-level or above and the rest must be of 300-level or above.

(5) Students are not permitted to take more than 8 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 180, and at 100-level or higher if mathematics courses are chosen. For those who opt for PHYS 331, the minimum total credits for free electives will be 13 and for those who opt for PHYS 224, the minimum total credits for free electives will be 14.

(6) Of these courses, at least one course in Humanities and one in Social Science are required.

(7) 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 Mathematics – Mathematics and Physics Option.

Recommended Pattern of Study for the Mathematics and Physics Option

1st year	Fall	C	MATH 101, MATH 111, PHYS 121	
		R	HLTH 001, LANG 108	
		E	GEE(ENGG)	(Total: 15 credits)
	Spring	C	PHYS 126	
		R	PHYS 127, HLTH 001, LANG 108, MATH 151, MATH 201	
		E	GEE(H&SS)	(Total: 17* credits)

2nd year	Fall	C	PHYS 221, PHYS 223	
		R	MATH 301, MATH 306, LANG 208	(Total: 17 credits)
	Spring	C	PHYS 234	
		R	PHYS 321, LANG 209, MATH 304	
		E	GEE(H&SS), FREE	(Total 19 credits)
3rd year	Fall	R	LANG 308, PHYS 331	
		E	MATH, FREE, GEE(SB&M), GEE(H&SS)	(Total 18 credits)
	Spring	E	GEE(H&SS), two MATH, two FREE	(Total: 17 credits)

* *LANG 108 is a two-semester course. The course credits will be earned on completion of the course at the end of 1st year Spring.*

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