

Curriculum for BSc in Mathematics - Pure Mathematics Option

Major Program Requirements

Core courses

MATH 102	Multivariable and Vector Calculus	[2-1-0:4]
MATH 111	Linear Algebra	[3-1-0:4]
MATH 202	Introduction to Real Analysis	[2-1-0:4]

Required courses

MATH 151	Differential Equations and Applications	[3-1-0:4]
(1) MATH 301	Real Analysis	[3-1-0:4]
(1) MATH 304	Complex Analysis	[3-1-0:4]
(1) MATH 311	Algebra I	[3-1-0:4]
(1),(2) MATH 315	Number Theory and Applications	[3-1-0:4]
(1) MATH 320	Euclidean and Non-Euclidean Geometries	[3-1-0:4]
COMP 102	Computer and Programming Fundamentals I	[3-0-2:3]
(3) PHYS 111	Physics I	[3-1-2:4]

Elective courses

Elective types		Minimum no. of courses	Minimum total credits
(4) MATH	Mathematics Elective	5	15
(5) FREE	Free Elective	5	15

Note: Unless otherwise approved by the Department, zero-level mathematics courses cannot be used to fulfill any MATH or FREE elective requirements.

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	6
(5) GEE(SB&M)	Business and Management General Education Elective	1	
(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]
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Notes:

- (1) These courses do not have to be taken in the indicated order. However, students are required to take at least two out of the five in the second year.
- (2) This course can be replaced by MATH 312 provided that enrolment quota is available.
- (3) This course can be replaced by PHYS 121 provided that enrolment quota is available.
- (4) MATH electives are recommended to be chosen from MATH 110, MATH 241, MATH 303, MATH 306, MATH 310, MATH 316, MATH 321. At least three MATH electives must be at 300-level or above.
- (5) ISMT 111 cannot be used to satisfy any FREE elective requirement as well as the GEE(SB&M) requirement.
- (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 101 credits is required for the BSc program in Mathematics (Pure Mathematics Option). Students must take additional course(s) and/or elective(s) of higher-than-required credit value to meet this minimum total of 101 credits.

Recommended Pattern of Study for the Pure Mathematics Option

1st year	Fall	C MATH 102, MATH 111, MATH 202 R COMP 102, HLTH 001, LANG 108 E MATH 110, GEE(H&SS)	(Total: 12 credits)
	Spring	C MATH 102, MATH 202 R MATH 151, HLTH 001, LANG 108 E GEE(SB&M), FREE	(Total: 20* credits)
2nd year	Fall	R MATH 301, MATH 311, MATH 315, LANG 208, PHYS 111	(Total: 17 credits)

	Spring	R	MATH 304, LANG 209	
		E	MATH 241, MATH 303, GEE(H&SS)	(Total: 16 credits)
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3rd year	Fall	R	LANG 308	
		E	MATH 306, MATH, GEE(ENGG), GEE(H&SS), FREE	(Total: 18 credits)
	Spring	R	MATH 320	
		E	GEE(H&SS), three FREE	(Total: 18 credits)

* LANG 108, MATH 102 and MATH 202 are two-semester courses. The course credits will be earned on completion of the courses at the end of 1st year Spring.

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