

## Four-Year Study Plan of Applied Mathematics Programme (2022 cohort)

Rev 20231106

Rev 2023/100

Course Code	Course Title	Year One		Year Two		Year Three		Year Four	
		Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
I. Major Required Courses (51 Units)									
MATH1053	Linear Algebra I	3							
MATH1073	Calculus I	3							
COMP1023	Foundations of C Programming		3						
MATH1063	Linear Algebra II		3						
MATH1083	Calculus II		3						
COMP2003	Data Structures and Algorithms			3					
MATH2043	Ordinary Differential Equations			3					
MATH2053	Mathematical Analysis			3					
STAT2063	Probability Theory			3					
MATH4083	Numerical Analysis				3				
OR4023	Optimization				3				
STAT3083	Applied Statistics				3				
MATH4093	Complex Analysis					3			
MATH4103	Mathematical Modelling					3			
MATH3033	Partial Differential Equations						3		
MATH3163	Real Analysis						3		
MATH4123	Final Year Project I (MATH)							3 <sup>(3)</sup>	
II. Major Elective Courses (15 Units)									
ME01 ME02 ME03 ME04 ME05					3	3	3	3	3
III. University Core Courses (37 Units)									
UCLC1003	University Chinese	3							
UCLC1013	English for Academic Purposes I	3							
UCLC1023	English for Academic Purposes II		3						
UCLC1033	English for Academic Purposes III				3				
CHII103	Introduction to Modern Social Theories	3							
CHII203	Morality and Foundations of Law			3					
CHII063	Chinese Culture and Modern China				3				
CHII073	Contemporary Chinese Society and Thought I		3						
CHII253	Contemporary Chinese Society and Thought II		3						
CHII193	Contemporary World and China <sup>①</sup>				2				
MT1003	Military Training	2							
WPEX1013	Emotional Intelligence		1						
WPEX2013	Experiential Arts <sup>②</sup>				1				
WPEX2023/ WPEX2033	Voluntary Service <sup>②</sup> , or Environmental Awareness <sup>②</sup>			1					
UCHL1XX3	Healthy Lifestyle <sup>②</sup>	1	1		1				
IV. General Education Courses (18 Units)									
Level 1	History and Civilization <sup>②</sup>			3					
Foundational Courses	Quantitative Reasoning <sup>②</sup>	3							
	Values and the Meaning of Life <sup>④</sup>		3						
Level 2 Interdisciplinary Thematic Courses	Culture, Creativity and Innovation <sup>⑥</sup> , or Science, Technology and Society <sup>⑥</sup> , or Sustainable Communities <sup>⑥</sup>					3	3		
Level 3 GE Capstone Courses	Service-Learning Course <sup>⑥</sup> , or Service Leadership Education Course <sup>⑥</sup> , or Experiential Learning Course <sup>⑥</sup> , or Interdisciplinary Independent Study <sup>⑥</sup>								3
V. Free Elective Courses (27 Units)									
FE01 FE02 FE03 FE04 FE05 FE06 FE07 FE08 FE09				3		9	6	9	
Total Units: 148		21	23	22	22	21	18	15	6

<sup>(1)</sup> This 2-unit course requires student to attend at least 10 lectures within his/her first two years of study.

<sup>(2)</sup> This denotes a course category in which a list of courses may be developed for students' selection. Students are expected to refer to the Online Course Selection System for courses available under each category.

<sup>(3)</sup> Students who continue with the final year project in the second semester of Year 4 should register MATH4163 Final Year Project II (MATH) as a major elective during the Online Course Selection (or Course Add/Drop) period.

<sup>(4)</sup> Students are required to take GFVM1033 Ethics in An Era of Artificial Intelligence and Robotics or GFVM1043 Ethics in Daily Life and Life Sciences under this category.

**ME Course List of AM (2022 cohort)**

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Course Code	Course Title	Units
BIOL2003	General Biology	3
DS4023	Machine Learning	3
FINM2073	Introduction to Python for Mathematical Computing	3
FINM3013	Introduction to Financial Derivatives	3
FINM3113	Financial Engineering Workshop	3
FINM3123	Introduction to Econometrics	3
FINM3133	Time Series for Finance and Macroeconomics	3
FINM3143	Financial Mathematics	3
FINM4053	Numerical and Simulation Techniques in Finance	3
FINM4063	Stochastic Calculus for Finance	3
MATH3013	Discrete Mathematics	3
MATH3143	Differential Geometry	3
MATH3173	Applied Stochastic Process	3
MATH4003	Graph Theory	3
MATH4033	Computational Finance	3
MATH4113	Selected Topics in Applied Analysis	3
MATH4143	Functional Analysis	3
MATH4153	Numerical Methods for Differential Equations	3
MATH4163	Final Year Project II (MATH) <sup>#</sup>	3
OR3013	Linear Programming and Integer Programming	3
OR3023	Simulation	3
PHYS2003	Principles of Physics	3
STAT4013	Multivariate Analysis	3
STAT4073	Data Mining	3

# Students who continue with the final year project in the second semester of Year 4 should, with the approval of the Programme, register MATH4163 Final Year Project II (MATH) as a major elective in that semester.