

The Hong Kong University of Science and Technology

School of Science

An Example on Student's Pathway (as of 2 August 2021)

<< Declaration of major

School:		School of Science			Student's Pathways (i.e. Study Pattern)										Remarks					
Department:		Department of Mathematics			Pathway 1															
Program:		BSc in Mathematics			Background: HKDSE 4 Core + 1 Elec + MATH M1/M2 Profile: Normative. Students to graduate with BSc MATH following Applied Mathematics Track															
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Major Pre-requisite	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Sub-total							
School Requirements																				
SCIE	1000	Science School Induction	0		0	0							0							
COMP	1021	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science	3-4					3					3							
COMP	1022P	Introduction to Computing with Java	3																	
COMP	2011	Programming with C++	4																	
LANG	2010	English for Science I	3				3						3							
MATH		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] (Students following IRE track can only use MATH 1023 and MATH 1024 to fulfill the requirement)	4-7																	
MATH	1012	Calculus IA	4	@	3	3							6							
MATH	1013	Calculus IB	3																	
MATH	1014	Calculus II	3																	
MATH	1020	Accelerated Calculus	4																	
MATH	1023	Honors Calculus I	3																	
MATH	1024	Honors Calculus II	3																	
CHEM	1004	Chemistry in Everyday Life	3		3								3							
CHEM	1010	General Chemistry IA	3										0							
CHEM	1020	General Chemistry IB	3										0							
CHEM	1030	General Chemistry II	3										0							
CHEM	1050	Laboratory for General Chemistry I	1										0							
CHEM	1055	Laboratory for General Chemistry II	1										0							
LIFS	1901	General Biology I	3			3							3							
LIFS	1902	General Biology II	3										0							
LIFS	1903	Laboratory for General Biology I	1										0							
LIFS	1904	Laboratory for General Biology II	1										0							
LIFS	1930	Nature of Life Sciences	3										0							
LIFS	2210	Biochemistry I	3										0							
MATH	2023	Multivariable Calculus	4				4						4							
MATH	2121	Linear Algebra	4				{4}						0							
MATH	2131	Honors in Linear and Abstract Algebra I	4										0							
OCES	1030	Environmental Science	3										0							
PHYS	1001	Physics and the Modern Society	3										0							
PHYS	1111	General Physics I	3										0							
PHYS	1112	General Physics I with Calculus	3		3								3							
PHYS	1113	Laboratory for General Physics I	1		1								1							
PHYS	1114	General Physics II	3			3							3							
PHYS	1115	Laboratory for General Physics II	1										0							
PHYS	1312	Honors General Physics I	3										0							
PHYS	1314	Honors General Physics II	3										0							
Required credits for School / Major Pre-requisite Requirements													29							
Major Requirements																				
Major Required Courses and Electives																				
MATH	2023	Multivariable Calculus	4				(4)						0							
MATH		Note: MATH 2033 OR MATH 2043 [Students following IRE Track or Pure Mathematics (Advanced) Track can only use MATH 2043 to fulfill the requirement.]	4					4					4							
MATH	2033	Mathematical Analysis	4																	
MATH	2043	Honors Mathematical Analysis	4																	
MATH		Note: MATH 2121 OR MATH 2131 [Students following IRE Track or Pure Mathematics (Advanced) Track can only use MATH 2131 to fulfill the requirement.]	4				4						4							
MATH	2121	Linear Algebra	4																	
MATH	2131	Honors in Linear and Abstract Algebra I	4																	
MATH		Note: MATH 3033 OR MATH 3043 [Students following IRE Track or Pure Mathematics (Advanced) Track can only use MATH 3043 to fulfill the requirement.]	4						4				4							
MATH	3033	Real Analysis	4																	
MATH	3043	Honors Real Analysis	4																	
LANG		Note: LANG 3021 OR LANG 3026 (Students following IRE Track should take LANG 3026 to fulfill the requirement.)	3									3	3							
LANG	3021	Science Communication in English (Mathematics)	3																	
LANG	3026	Science Communication in English for Research Students (Mathematics and Physics)	3																	
Required credits for Major Required Courses and Electives													19							
Track Study																				
<i>Applied Mathematics Track</i>																				
MATH	MATH 4992 MATH 4999	Note: MATH 4992 OR MATH 4999 Capstone Project in Applied Mathematics Independent Capstone Project	3									3	3							
MATH	2352	Differential Equations	4				4						4							
MATH	2411	Applied Statistics	4				4						4							
MATH	3312	Numerical Analysis	3					3					3							
MATH		MATH Depth Electives (4 courses from the specified elective list)	12						3	3	3	3	12							
Required credits for Applied Mathematics Track													26							
University CORE																				
CORE	C3 - C12	U CORE - Others	30		3	3	3	3	3	9	3	3	30							
CORE	C1 & C2	U CORE - English Language	6		3	3							6							
Sub-total for University CORE													36							
													Term load (excl. free credits)							
													16	15	17	15	13	15	9	6
													106#							

Notes:

@ Course that students need to complete before enrolling into respective major/programs.

() indicates the reuse of the same course to fulfill more than one requirement.

{ } indicates the course overlapping with another requirement will not be necessarily counted towards the School Requirements.

To graduate, students should complete at least 120 credits in approved courses. They may need to take courses additional to the required and elective courses as specified above to meet this minimum credit requirement.

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

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School:		School of Science			Student's Pathways (i.e. Study Pattern)										Remarks							
Department:		Department of Mathematics			Pathway 1																	
Program:		BSc in Mathematics			Background: HKDSE 4 Core + 1 Elec (incl. 1/2x PHYS) + MATH M1/M2																	
Course Offering Dept (course code prefix)		Course Code	Course Title / Courses List		Credits	Major Pre-requisite	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Sub-total							
School Requirements																						
SCIE	1000	Science School Induction		0			0	0							0							
COMP	1021	Note: COMP 1021 OR COMP 1022P OR COMP 2011		3-4																		
COMP	1022P	Introduction to Computer Science		3																		
COMP	2011	Introduction to Computing with Java		3							3				3							
COMP	2011	Programming with C++		4																		
LANG	2010	English for Science I		3							3				3							
MATH		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] (Students following IRE track can only use MATH 1023 and MATH 1024 to fulfill the requirement)		4-7																		
MATH	1012	Calculus IA		4																		
MATH	1013	Calculus IB		3	@		3		3						6							
MATH	1014	Calculus II		3																		
MATH	1020	Accelerated Calculus		4																		
MATH	1023	Honors Calculus I		3																		
MATH	1024	Honors Calculus II		3																		
CHEM	1004	Chemistry in Everyday Life		3				3							3							
CHEM	1010	General Chemistry IA		3											0							
CHEM	1020	General Chemistry IB		3											0							
CHEM	1030	General Chemistry II		3											0							
CHEM	1050	Laboratory for General Chemistry I		1											0							
CHEM	1055	Laboratory for General Chemistry II		1											0							
LIFS	1901	General Biology I		3											3							
LIFS	1902	General Biology II		3											0							
LIFS	1903	Laboratory for General Biology I		1											0							
LIFS	1904	Laboratory for General Biology II		1											0							
LIFS	1930	Nature of Life Sciences		3											0							
LIFS	2210	Biochemistry I		3											0							
MATH	2023	Multivariable Calculus		4							4				4							
MATH	2121	Linear Algebra		4							(4)				0							
MATH	2131	Honors in Linear and Abstract Algebra I		4											0							
OCES	1030	Environmental Science		3											0							
PHYS	1001	Physics and the Modern Society		3											0							
PHYS	1111	General Physics I		3				3							3							
PHYS	1112	General Physics I with Calculus		3											0							
PHYS	1113	Laboratory for General Physics I		1				1							1							
PHYS	1114	General Physics II		3							3				3							
PHYS	1115	Laboratory for General Physics II		1							(1)				0							
PHYS	1312	Honors General Physics I		3											0							
PHYS	1314	Honors General Physics II		3											0							
Required credits for School / Major Pre-requisite Requirements															29							
Major Requirements																						
Major Required Courses and Electives																						
MATH	2023	Multivariable Calculus		4							(4)				0							
MATH		Note: MATH 2033 OR MATH 2043 [Students following IRE Track or Pure Mathematics (Advanced) Track can only use MATH 2043 to fulfill the requirement.]		4																		
MATH	2033	Mathematical Analysis		4							4				4							
MATH	2043	Honors Mathematical Analysis		4																		
MATH		Note: MATH 2121 OR MATH 2131 [Students following IRE Track or Pure Mathematics (Advanced) Track can only use MATH 2131 to fulfill the requirement.]		4																		
MATH	2121	Linear Algebra		4							4				4							
MATH	2131	Honors in Linear and Abstract Algebra I		4																		
MATH		Note: MATH 3033 OR MATH 3043 [Students following IRE Track or Pure Mathematics (Advanced) Track can only use MATH 3043 to fulfill the requirement.]		4																		
MATH	3033	Real Analysis		4											4							
MATH	3043	Honors Real Analysis		4																		
LANG		Note: LANG 3021 OR LANG 3026 (Students following IRE Track should take LANG 3026 to fulfill the requirement.)		3																		
LANG	3021	Science Communication in English (Mathematics)		3											3							
LANG	3026	Science Communication in English for Research Students (Mathematics and Physics)		3																		
Required credits for Major Required Courses and Electives															19							
Track Study																						
Mathematics and Physics Track																						
MATH	MATH 4991 MATH 4992 MATH 4999	Note: MATH 4991 OR MATH 4992 OR MATH 4999 Capstone Project in Pure Mathematics Capstone Project in Applied Mathematics Independent Capstone Project		3										3	3							
MATH	2352	Differential Equations		4							4				4							
MATH	3312	Numerical Analysis		3										3	3							
MATH	4023	Complex Analysis		3										3	3							
MATH	4052	Partial Differential Equations		3										3	3							
PHYS	PHYS 1111 PHYS 1112 PHYS 1312	Note: PHYS 1111 OR PHYS 1112 OR PHYS 1312 General Physics I General Physics I with Calculus Honors General Physics I		3				(3)							0							
PHYS	PHYS 1114 PHYS 1314	Note: PHYS 1114 OR PHYS 1314 General Physics II Honors General Physics II		3							(3)				0							
PHYS	PHYS 3033 PHYS 3053	Note: PHYS 3033 OR PHYS 3053 Electricity and Magnetism I Honors Electricity and Magnetism I		3-4										3	3							
PHYS	PHYS 3036 PHYS 3037	Note: PHYS 3036 OR PHYS 3037 Quantum Mechanics I Honors Quantum Mechanics I		3-4										3	3							
PHYS	PHYS 3034 PHYS 4051 PHYS 4052	Note: PHYS 3034 OR PHYS 4051 OR PHYS 4052 Electricity and Magnetism II Quantum Mechanics II Introductory Solid State Physics		3										3	(3) 3							
PHYS	1113	Laboratory for General Physics I		1				(1)							0							
PHYS	1115	Laboratory for General Physics II		1							1				1							
PHYS	2022	Modern Physics		3							3				3							
PHYS	2023	Modern Physics Laboratory		1							1				1							
PHYS	3032	Classical Mechanics		3										3	3							
PHYS	4050	Thermodynamics and Statistical Physics		3										3	3							
MATH/PHYS		MATH/PHYS 3000-level or above Elective (Any 1 course of the subject and level as specified)		3										3	3							
Required credits for Mathematics and Physics Track															46-48							
University CORE																						
CORE	C3 - C12	U CORE - Others		30				3	3		6	6	3	3	6	30						
CORE	C1 & C2	U CORE - English Language		6				3	3						6							
Sub-total for University CORE															36							
															Term load (excl. free credits)							
															16	16	15	17	16	15	15	9
															119#							

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