The Hong Kong University of Science and Technology

School of Science

An Example on Student's Pathway (as of Fall 2022-23)

<< Declaration of major

School:		**School of Science**			Student's Pathways (i.e. Study Pattern)								
Department:		**Department of Mathematics**			Pathway 1								
Program:		**BSc in Mathematics + Digital Media and Creative Arts**			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□	□	Note: COMP 1021 OR COMP 1022P OR COMP 2011□	3-4										
COMP□	1021□	Introduction to Computer Science□	3				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	1030	Environmental Science	3										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□	4										
□	□	or Pure Mathematics (Advanced) Track can only use MATH 2043□											
□	□	to fulfill the requirement.]□						4					4
MATH□	2033□	Mathematical Analysis□	4										
MATH	2043	Honors Mathematical Analysis	4										
MATH□	□	Note: MATH 2121 OR MATH 2131 [Students following IRE Track□	4										
□	□	or Pure Mathematics (Advanced) Track can only use MATH 2131□											
□	□	to fulfill the requirement.]□					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□	4										
□	□	or Pure Mathematics (Advanced) Track can only use MATH 3043□											
□	□	to fulfill the requirement.]□							4				4
MATH□	3033□	Real Analysis□	4										
MATH	3043	Honors Real Analysis	4										
LANG	3021	Science Communication in English (Mathematics)	3							3			3
Required credits for Major Required Courses and Electives			19										15
Track Study													
Applied Mathematics Track													
MATH		Note: MATH 4992 OR MATH 4999	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										26
DMCA Requirements													
Recommended Background Courses													
COMP/ISOM		Note: COMP 1021 OR COMP 1022P OR ISOM 3230	3										
COMP	1021	Introduction to Computer Science	3				(3)						0
COMP	1022P	Introduction to Computing with Java	3										
ISOM	3230	Business Applications Programming	3										
MATH		Note: MATH 1004 OR MATH 1020 OR MATH 1024	3-4										
MATH	1014	Calculus II	3			(3)							0
MATH	1020	Accelerated Calculus	4										
MATH	1024	Honors Calculus II	3										
COMP		Note: COMP 2011 OR COMP 2012 OR COMP 2012H	4-5										
COMP	2011	Programming with C++	4					4					4
COMP	2012	Object-Oriented Programming and Data Structures	4										
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5										
Required credits for DMCA Recommended Background Courses			10-12										4
Major Required Courses and Electives													
EMIA	2010B	Cross-disciplinary Seminar in Digital Media and Creative Arts	0				0						0
EMIA	2020	Cross-disciplinary Design Thinking	3				3						3
EMIA	2200	Introduction to Digital Media	3						3				3
EMIA		Note: EMIA 4990 OR EMIA 4991	0-3										
EMIA	4990	Interdisciplinary Capstone Design	0								0	0	0
EMIA	4991	Interdisciplinary Capstone Project	3										
SBM/SENG/ SSCI/IPO		Note: Students taking EMIA4990 should take a minimum of 12 credits; students taking EMIA4991 should take a minimum of 9 credits DMCA Electives	12-15								3	9	12
Required credits for DMCA Required Courses and Electives			21										21
University CORE													
CORE	C5 - C10	U CORE - Others	18				0	0	0	9	6	3	18
CORE	C3 - C4	U CORE - Cognitive and Behavioral Foundations of University Education	6		3	3							6
CORE	C1 - C2	U CORE - English Language	6		3	3							6
Sub-total for University CORE			30										30
					Term load (excl. free credits)								
					16	15	17	16	16	15	15	15	
					125#								

<< Declaration of major

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 c

>> 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.

The Hong Kong University of Science and Technology

School of Science

An Example on Student's Pathway (as of Fall 2022-23)

<< *Declaration of major*

School:		**School of Science**			Student's Pathways (i.e. Study Pattern)									
Department:		**Department of Ocean Science**			Pathway 1									
Program:		**BSc in Ocean Science and Technology**			Background: HKDSE 4 Core + 2 Elec□ □ Profile: Student to graduate with option									
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**	**Remarks**
School Requirements														
SCIE	1000	Science School Induction	0		0	0							0	
COMP□ COMP□ COMP□ COMP	□ 1021□ 1022P□ 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011□ Introduction to Computer Science□ Introduction to Computing with Java□ Programming with C++	3-4 3 3 4				3						3	
LANG	2010	English for Science I	3					3					3	
OCES	1001	The Earth as a Blue Planet	3	@	3								3	
OCES	1030	Environmental Science	3	@		3							3	
CHEM	1004	Chemistry in Everyday Life	3										0	
CHEM	1010	General Chemistry IA	3		3								3	
CHEM	1020	General Chemistry IB	3										0	
CHEM	1030	General Chemistry II	3			{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				3						3	
LIFS	1903	Laboratory for General Biology I	1				1						1	
LIFS	1904	Laboratory for General Biology II	1										0	
LIFS	1930	Nature of Life Sciences	3										0	
LIFS	2210	Biochemistry I	3										0	
MATH	1012	Calculus IA	4										0	
MATH	1013	Calculus IB	3		3								3	
MATH	1014	Calculus II	3			3							3	
MATH	1020	Accelerated Calculus	4										0	
MATH	1023	Honors Calculus I	3										0	
MATH	1024	Honors Calculus II	3										0	
MATH	2023	Multivariable Calculus	4										0	
MATH	2121	Linear Algebra	4										0	
MATH	2131	Honors in Linear and Abstract Algebra I	4										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										0	
PHYS	1114	General Physics II	3										0	
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													31	
Major Requirements														
Major Required Courses and Electives														
OCES	2001	Survey of Ocean Science	3				3		[3]				3	
OCES	2002	Marine Chemistry	3					3					3	
OCES	2003	Descriptive Physical Oceanography	3					3					3	
OCES	2100	Conservation Field Trips	1				1						1	
OCES	3001	Coastal Environmental Monitoring	3							3		[3]	3	
OCES	3003	Field Methods in Marine Studies	3						3		[3]		3	
OCES	3130	Marine Biology	3						3		[3]		3	
OCES	3160	Ecology	3						3		[3]		3	
OCES	4001	Ocean and Climate Change	3							3			3	
OCES/SCIE□ □ □ □ OCES□ OCES□ OCES□ SCIE□ SCIE	□ □ □ □ 4964□ 4974□ 4984□ 3500□ 4500	Note: OCES 4964 OR (OCES 4974 AND OCES 4984) OR□ (SCIE 3500 AND SCIE 4500) (Students following IRE□ Track can only use (SCIE 3500 AND SCIE 4500) to fulfill□ the requirement.)□ Ocean Science and Technology Capstone Project Research□ Ocean Science and Technology Research Project I□ Ocean Science and Technology Research Project II□ IRE Research Project I□ IRE Research Project II	3-6 3 3 3 3 3								3		3	
CHEM□ CHEM□ CHEM	□ 1010□ 1020	Note: CHEM 1010 OR CHEM 1020□ General Chemistry IA□ General Chemistry IB	3 3 3		(3)								0	
CHEM	1030	General Chemistry II	3			3							3	
LIFS□ □ LIFS	□ □ 1901	Note: Students with level 3 or above in HKDSE 1x Biology are□ exempted from taking LIFS 1901□ General Biology I	0-3 3			(3)							0	
LIFS	1902	General Biology II	3				(3)						0	
MATH□ □ MATH□ MATH□ MATH□ MATH□ MATH□ MATH	□ □ 1012□ 1013□ 1014□ 1020□ 1023□ 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND□ (MATH 1014 OR MATH 1024)] OR [MATH 1020]□ Calculus IA□ Calculus IB□ Calculus II□ Accelerated Calculus□ Honors Calculus I□ Honors Calculus II	4-7 4 3 3 4 3 3		(3)	(3)							0	
PHYS□ PHYS□ PHYS□ PHYS	□ 1111□ 1112□ 1312	Note: PHYS 1111 OR PHYS 1112 OR PHYS 1312□ General Physics I□ General Physics I with Calculus□ Honors General Physics I	3 3 3 3		(3)								0	
COMP	1021	Introduction to Computer Science	3				(3)						0	
LANG□ □ LANG□ LANG	□ □ 3025□ 3027	Note: LANG 3025 OR LANG 3027 (Students following IRE Track□ should take LANG 3027 to fulfill the requirement.)□ Science Communication in English (Environmental Science)□ Science Communication in English for Research Students (Chemistry, Life Science and Ocean Science)	3 3 3						3				3	
OCES/LIFS/MATH/ISDN		Ocean Science and Technology Electives (Courses from the specified elective list. Students taking the Marine Ecology Option must use OCES 4203 and OCES 4301 to count towards this elective requirement, while those taking the Oceanography Option must use MATH 2350 and OCES 3301. Courses taken to fulfill the Track/Option requirements may not be counted towards this elective requirement.)	12							6	3	3	12	
Required credits for Major Required Courses and Electives			62-71										46	
Option Requirements														
Marine Ecology Option														
OCES		Marine Ecology Electives (2 courses from the specified elective list)	6								3	3	6	
Required credits for Marine Ecology Option			6										6	
DMCA Requirements														
Recommended Background Courses														
COMP/ISOM COMP COMP ISOM	 1021 1022P 3230	Note: COMP 1021 OR COMP 1022P OR ISOM 3230 Introduction to Computer Science Introduction to Computing with Java Business Applications Programming	3 3 3 3				(3)						0	
MATH MATH MATH MATH	 1014 1020 1024	Note: MATH 1004 OR MATH 1020 OR MATH 1024 Calculus II Accelerated Calculus Honors Calculus II	3-4 3 4 3			(3)							0	
COMP COMP COMP COMP	 2011 2012 2012H	Note: COMP 2011 OR COMP 2012 OR COMP 2012H Programming with C++ Object-Oriented Programming and Data Structures Honors Object-Oriented Programming and Data Structures	4-5 4 4 5					4					4	
Required credits for DMCA Recommended Background Courses			10-12										4	
Major Required Courses and Electives														
EMIA	2010B	Cross-disciplinary Seminar in Digital Media and Creative Arts	0				0						0	
EMIA	2020	Cross-disciplinary Design Thinking	3				3						3	
EMIA	2200	Introduction to Digital Media	3						3				3	
EMIA EMIA EMIA	 4990 4991	Note: EMIA 4990 OR EMIA 4991 Interdisciplinary Capstone Design Interdisciplinary Capstone Project	0-3 0 3								0	0	0	
SBM/SENG/ SSCI/IPO		Note: Students taking EMIA4990 should take a minimum of 12 credits; students taking EMIA4991 should take a minimum of 9 credits DMCA Electives	12-15								3	9	12	
Required credits for DMCA Required Courses and Electives			21										21	
University CORE														