

The Hong Kong University of Science and Technology

School of Science

An Example on Student's Pathway (as of 26 July 2024)

<< Declaration of major

School:		School of Science		Student's Pathways (i.e. Study Pattern)										Remarks	
Department:		Department of Physics		Pathway 1											
Program:		BSc in Physics		Background: HKDSE 4 Core + 2 Elec (incl. 1/2x PHYS)											
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															
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	
PHYS	1111	1112	1312	Note: PHYS 1111 OR PHYS 1112 OR PHYS 1312 (Students taking IRE Track can only use PHYS 1312 to fulfill the requirement.) General Physics I General Physics I with Calculus Honors General Physics I	3	@	3							3	
PHYS	1114	1314		Note: PHYS 1114 OR PHYS 1314 (Students taking IRE Track can only use PHYS 1314 to fulfill the requirement.) General Physics II Honors General Physics II	3	@		3						3	
CHEM	1008			1008 Introductory Chemistry	3		3							3	
CHEM	1011			1011 General Chemistry A: Reactions, Thermodynamics, and Reaction Kinetics	3									0	
CHEM	1012			1012 General Chemistry B: Atomic Structure, Molecules, and Bonding Theories	3									0	
CHEM	1051			1051 Laboratory for General Chemistry A	1									0	
CHEM	1052			1052 Laboratory for General Chemistry B	1									0	
DASC	2010			2010 Calculus for Data Analytics in Science	3									0	
LIFS	1030**			1030** Environmental Science	3									0	
LIFS	1901			1901 General Biology I	3			3						3	
LIFS	1902			1902 General Biology II	3									0	
LIFS	1903			1903 Laboratory for General Biology I	1									0	
LIFS	1904			1904 Laboratory for General Biology II	1									0	
LIFS	1930			1930 Nature of Life Sciences	3									0	
LIFS	2210			2210 Biochemistry I	3									0	
MATH	1012			1012 Calculus IA	4									0	
MATH	1013			1013 Calculus IB	3		3							3	
MATH	1014			1014 Calculus II	3			3						3	
MATH	1020			1020 Accelerated Calculus	4									0	
MATH	1023			1023 Honors Calculus I	3									0	
MATH	1024			1024 Honors Calculus II	3									0	
MATH	2023			2023 Multivariable Calculus	4				4					4	
MATH	2121			2121 Linear Algebra	4				(4)					0	
MATH	2131			2131 Honors in Linear and Abstract Algebra I	4									0	
OCES	1001			1001 The Earth as a Blue Planet	3									0	
OCES	1010			1010 Principles and Applications of Environmental Science	3									0	
PHYS	1101			1101 Introductory Physics	4									0	
PHYS	1113			1113 Laboratory for General Physics I	1		1							1	
PHYS	1115			1115 Laboratory for General Physics II	1			(1)						0	
Required credits for School / Major Pre-requisite Requirements														26	
Major Requirements															
Major Required Courses and Electives															
PHYS	1113			1113 Laboratory for General Physics I	1		(1)							0	
PHYS	1115			1115 Laboratory for General Physics II	1			1						1	
PHYS	2022			2022 Modern Physics	3				3					3	
PHYS	2023			2023 Modern Physics Laboratory	1				1					1	
PHYS	2080			2080 Physics Seminar and Tutorial I	1				1					1	
PHYSMATH				Note: PHYS 2124 OR MATH 2352 (Students taking the Physics and Mathematics Option may take either MATH 2352 or PHYS 2124. Other students can only take PHYS 2124 to fulfill the requirement.) Mathematical Methods in Physics I Differential Equations	3-4				3					3	
PHYS	3032			3032 Classical Mechanics	3				3					3	
PHYS	3033			Note: PHYS 3033 OR PHYS 3053 (Students taking IRE Track or Honors Physics Option can only use PHYS 3053 to fulfill the requirement.) Electricity and Magnetism I Honors Electricity and Magnetism I	3-4					3				3	
PHYS	3036			Note: PHYS 3036 OR PHYS 3037 (Students taking IRE Track or Honors Physics Option can only use PHYS 3037 to fulfill the requirement.) Quantum Mechanics I Honors Quantum Mechanics I	3-4						3			3	
PHYSMATH				Note: PHYS 3142 OR MATH 3312 (Students taking the Physics and Mathematics Option may take either MATH 3312 or PHYS 3142. Other students can only take PHYS 3142 to fulfill the requirement.) Computational Methods in Physics Numerical Analysis	3						3			3	
PHYS	3152			3152 Methods of Experimental Physics I	3					3				3	
PHYS	3153			3153 Methods of Experimental Physics II	3						3			3	
PHYS	4050			4050 Thermodynamics and Statistical Physics	3							3		3	
PHYS	4080			4080 Physics Seminar and Tutorial II	1							1		1	
PHYS/SCIE				Note: PHYS 4191 OR PHYS 4291 OR (SCIE 3500 AND SCIE 4500) (Students taking IRE Track can only use (SCIE 3500 AND SCIE 4500) to fulfill the requirement; those taking Honors Physics Option can only use PHYS 4291 to fulfill the requirement.) Capstone Project Capstone Research IRE Research Project I IRE Research Project II	4-6							4		4	
PHYS	4811			Note: PHYS 4811 OR PHYS 4812 OR PHYS 4813 OR PHYS 4814 (2 courses out of 4) Contemporary Applications of Physics: Machine Learning in Physics Contemporary Applications of Physics: Quantum Information Technology Contemporary Applications of Physics: Atmospheric Physics - Making Sense of Weather and Climate Contemporary Applications of Physics: Medical Physics	2							2		2	
MATH	1012			Note: (MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024) OR (MATH 1020)	4-7									0	
MATH	1013			1013 Calculus IB	3									0	
MATH	1014			1014 Calculus II	3		(3)	(3)						0	
MATH	1020			1020 Accelerated Calculus	4									0	
MATH	1023			1023 Honors Calculus I	3									0	
MATH	1024			1024 Honors Calculus II	3									0	
MATH	2011			Note: MATH 2011 OR MATH 2023 (Students in Honors Physics Option, Physics and Mathematics Option and IRE Track can only use MATH 2023 to fulfill the requirement)	3-4						(4)			0	
MATH	2023			2023 Introduction to Multivariable Calculus Multivariable Calculus	3									0	
MATH	2111			Note: MATH 2111 OR MATH 2121 OR MATH 2131 (Students in Honors Physics Option, Physics and Mathematics Option and IRE Track can only use MATH 2121 OR MATH 2131 to fulfill the requirement)	3-4						4			4	
MATH	2121			2121 Matrix Algebra and Applications	3									4	
MATH	2131			2131 Linear Algebra Honors in Linear and Abstract Algebra I	4									4	
Required credits for Major Required Courses and Electives				48-58										41	
University CORE															
CORE	C3 - C10			U CORE - Others	24		1	2		6	3	3	6	3	24
CORE	C1 & C2			U CORE - English Language	6										6
Sub-total for University CORE				30										30	
Term load (excl. free credits)															
14 15 16 12 9 12 16 3															
97#															
<< 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 credit requirement.

**Remarks on course(s):

LIFS 1030: The course was last offered in 2020-21 and was deleted subsequently.

>> 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 for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.