The Hong Kong University of Science and Technology School of Science An Example on Student's Pathway

<< Declaration of major

							<< De	claratio	on of m	ajor				
School:		School of Science						:	Student's	Pathways	s (i.e. Stu	idy Patter	n)	
Department: Department of Mathematics					Deekere									
Program: BSc in Mathematics					Background: HKDSE 4 Core + 1 Elec + MATH M1/M2 Profile: Normative. Students to graduate with BSc MATH following Applied									
						Normativ atics Tra		nts to grad	duate with	BSc MA	TH follow	ing Appli	ed	
Course	Course Code	Course Title / Courses List					:							
Offering□ Dept□				Major Pre-requisit			1							
(course code prefix)				r Pre	~	Yea	~	Yea	~	Yea	~	Yea		
prenx)			Q	e-req	Year 1 Fa	Year 1 Sprin	Year 2 Fa	Year 2 Sprin	Year 3 Fa	Year 3 Sprin	Year 4 Fa	Year 4 Sprin	Sub-tota	
			Credit	uisit	1 Fa	pring	2 Fa	pring	3Fa	pring	4 Fa	pring	-tota	Remarks
School Re	equirements		<i>w</i>	m		G	- =	G		0		0	-	
SCIE	1000	Science School Induction	0		0	0							0	
COMP COMP	□ 1021□	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science	3-4 3				3						3	
COMP COMP	1022P□ 2011	Introduction to Computing with Java⊡ Programming with C++	3 4				Š						5	
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 □	4-7				i							
		following IRE track can only use MATH 1023 and MATH 1024 □ to fulfill the requirement)□					i							
MATH□ MATH□	1012□ 1013□	Calculus IA	4 3	@	3	3	i						6	
MATH	1014 🗆	Calculus II	3				i i							
MATH MATH	1020 □ 1023 □	Accelerated Calculus Honors Calculus I	4 3				1							
MATH CHEM	1024 1004	Honors Calculus II Chemistry in Everyday Life	3	+	3		:		 				3	
CHEM	1010	General Chemistry IA	3				:	<u> </u>					0	
CHEM	1020	General Chemistry IB	3	1			!						0	
CHEM	1030	General Chemistry II	3				!						0	
CHEM	1050 1055	Laboratory for General Chemistry I Laboratory for General Chemistry II	1				Ļ		<u> </u>	<u> </u>		<u> </u>	0	
LIFS	1030	Environmental Science	3	+			<u> </u>						0	
LIFS	1901	General Biology I	3	1		3	İ		L	L		L	3	
LIFS	1902	General Biology II	3				Ī .						0	
LIFS	1903	Laboratory for General Biology I	1	+									0	
LIFS	1904 1930	Laboratory for General Biology II Nature of Life Sciences	1	+			i –	-					0	
LIFS	2210	Biochemistry I	3		-		;						0	
MATH	2023	Multivariable Calculus	4				4						4	
MATH	2121	Linear Algebra	4				{4}						0	
MATH OCES	2131 1030	Honors in Linear and Abstract Algebra I Environmental Science	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		Ì						3	
PHYS	1113	Laboratory for General Physics I	1		1		i						1	
PHYS PHYS	1114 1115	General Physics II Laboratory for General Physics II	3		-	3	i —						3	
PHYS	1312	Honors General Physics I	3				i—						0	
PHYS	1314	Honors General Physics II	3		-		;						0	
		edits for School / Major Pre-requisite Requirements	;										29	
Major Rec	quirements													
Major Requir	red Courses and 2023	Electives Multivariable Calculus	4		1	1	(4)	1	1	1	<u> </u>	1	0	
MATH		Note: MATH 2033 OR MATH 2043 [Students following IRE Track	4		-		(4)						0	
		or Pure Mathematics (Advanced) Track can only use MATH 2043 to fulfill the requirement.]						4					4	
MATH D	2033 2043	Mathematical Analysis□ Honors Mathematical Analysis	4											
MATH	2043	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.]	1		1		4	1	1				4	
MATH D	2121 □ 2131	Linear Algebra □ Honors in Linear and Abstract Algebra I	4		1		Í.	1	1					
MATH		Note: MATH 3033 OR MATH 3043 [Students following IRE Track□ or Pure Mathematics (Advanced) Track can only use MATH 3043□	4				i	1						
		to fulfill the requirement.]			1		i	1	4				4	
MATH D	3033 3043	Real Analysis⊡ Honors Real Analysis	4				i							
LANG	3021 Boguiro	Science Communication in English (Mathematics)	3	+						3		<u> </u>	3	
Track Study		ed credits for Major Required Courses and Electives	19	1		1	i	1	I	I	I	I	15	
Applied Mathem														
MATH		Note: MATH 4992 OR MATH 4999	3				<u> </u>				3		3	
MATH	2352	Differential Equations	4				!	4					4	
MATH MATH	2411 3312	Applied Statistics Numerical Analysis	4	-			<u> </u>	4	0	<u> </u>		<u> </u>	4	
MATH	0011	MATH Depth Electives (4 courses from the specified elective list)	12	+			!		3	 		 	3	
							<u> </u>	1	3	3	3	3	12	
AL D		Required credits for Applied Mathematics Track	26	1			i –						26	
Al Require		Courses												
COMP/ISOM	ded Background	Courses 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				(0)						, in the second s	
ISOM MATH	3230	Business Applications Programming Note: MATH 1004 OR MATH 1020 OR MATH 1024	3 3-4											
MATH	1014	Calculus II	3			(3)							0	
MATH	1014 1020 1024	Accelerated Calculus	4			(0)								
MATH ISOM/MATH	1024	Honors Calculus II Note: ISOM 2500 OR MATH 2411	3 3-4											
ISOM	2500	Business Statistics	3					(4)					0	
MATH	2411	Applied Statistics	4				-						0	
Major Requir	red Courses and		9-11										0	
EMIA	2010A	Cross-disciplinary Seminar in Artificial Intelligence	0				0						0	
EMIA	2020	Cross-disciplinary Design Thinking	3				3						3	
COMP		Note: COMP 2011 OR COMP 2012 OR COMP 2012H	4-5											
COMP	2011	Programming with C++	4					4					4	

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										
COMP		Note: COMP2211 OR COMP3211	3										
COMP	2211	Exploring Artificial Intelligence	3					3				3	
COMP	3211	Fundamentals of Artificial Intelligence	3										
COMP/EMIA/MATH		Note: COMP 4211 OR EMIA 4110 OR MATH 4432	3										
COMP	4211	Machine Learning	3							3		3	
EMIA	4110	Practical Machine Learning	3										
MATH	4432	Statistical Machine Learning	3										
EMIA		Note: EMIA 4990 OR EMIA 4991	0-3										
EMIA	4990	Interdisciplinary Capstone Design	0							0		0	
EMIA	4991	Interdisciplinary Capstone Project	3										
SBM/SENG/		Note: Students taking EMIA4990 should take a minimum of 9 credits;	6-9										
SSCI/IPO		students taking EMIA4991 should take a minimum of 6 credits											
									3		6	9	
		AI Electives											
	Requ	ired credits for AI Required Courses and Electives	22-23									22	
University	CORE												
CORE	C3 - C12	U CORE - Others	30	3	3	0	3	3	9	6	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3							6	
		Sub-total for University CORE	36									36	
		Sub-total for University CORE	30									30	
						Ter	m load (ex	cl. free cre	edits)				
				16	15	17	19	16	18	15	12	1	
							1:	28#				1	
												1	

Notes:

<< Declaration of major

@ 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.

2020-21 MATH (4Y) (2020-21 intake)

The Hong Kong University of Science and Technology School of Science An Example on Student's Pathway

<< Declaration of major

								< Declaration of major									
School:		School of Science							Student's Pathway	Pathways	s (i.e. Stu	dy Patteri	ר)				
Department: Program:		Department of Ocean Science BSc in Ocean Science and Technology	Backgro														
			Profile: \$														
Course 🗆	Course Code	Course Title / Courses List		1			<u> </u>	1	1	1							
Offering□ Dept□				Major			į										
(course code prefix)				r Pre-	Ye	Year	Ye	Year	Ye	Year	Ye	Year	s				
			Credit	Pre-requis	Year 1 F	Year 1 Sprir	Year 2 Fa	Year 2 Sprir	ríear 3 Fa	rear 3 Sprir	Year 4 Fa	rear 4 Sprir	Sub-tota				
School Re	quirements		lits	iite	Fal	ng	a	ng	a	ng	al	ŋg	tal	Remarks			
SCIE	1000	Science School Induction	0		0	0							0				
COMP COMP COMP COMP COMP COMP COMP COMP	□ 1021□ 1022P□	Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4 3				3						3				
	2011 2010	Introduction to Computing with Java Programming with C++ English for Science I	3 4 3				i										
OCES	1001	The Earth as a Blue Planet	3	@	3		i –	3					3				
DCES/LIFS	□ 1030□	Note: OCES 1030 OR LIFS 1030 Environmental Science	3 3	@		3	Ì						3				
LIFS CHEM	1030 1004	Environmental Science Chemistry in Everyday Life	3										0				
CHEM	1010 1020	General Chemistry IA General Chemistry IB	3		3		!						3				
CHEM	1030	General Chemistry II	3			{3}	<u> </u>						0				
CHEM	1050 1055	Laboratory for General Chemistry I Laboratory for General Chemistry II	1				i —						0				
LIFS	1901	General Biology I	3			3	i						0				
LIFS	1902	General Biology II	3				3						3				
LIFS	1903 1904	Laboratory for General Biology I Laboratory for General Biology II	1			1	i –						1				
LIFS	1930	Nature of Life Sciences	3				<u> </u>						0				
LIFS MATH	2210 1012	Biochemistry I Calculus IA	3		<u> </u>		<u> </u>						0				
MATH	1013	Calculus IB	3		3								3				
MATH MATH	1014 1020	Calculus II Accelerated Calculus	3 4			3							3				
MATH	1023	Honors Calculus I	3										0				
MATH MATH	1024 2023	Honors Calculus II Multivariable Calculus	3										0				
MATH	2121	Linear Algebra	4										0				
MATH PHYS	2131 1001	Honors in Linear and Abstract Algebra I Physics and the Modern Society	4				-						0				
PHYS	1111	General Physics I	3	L	L	L		L	L			_	0				
PHYS PHYS	1112 1113	General Physics I with Calculus Laboratory for General Physics I	3 1		3		į —						3				
PHYS	1114	General Physics II	1				!			L	L		0				
PHYS PHYS	1115 1312	Laboratory for General Physics II Honors General Physics I	1										0				
PHYS	1312	Honors General Physics I Honors General Physics II	3				<u> </u>						0				
		redits for School / Major Pre-requisite Requirements											31				
Major Require	uirements ed Courses and	Electives															
DCES	2001	Survey of Ocean Science	3	1			i	3	1	[3]			3				
DCES	2002	Marine Chemistry Descriptive Physical Oceanography	3					3					3				
DCES	2100	Conservation Field Trips	1				3						3				
OCES	3002 3003	Remote Sensing, GIS and GPS Field Methods in Marine Studies	3				i			3		[3]	3				
OCES	3130	Marine Biology	3				i –		3		[3] [3]		3				
OCES	3160		3 3-6				ļ –		3		[3]		3				
		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⊡	3-0														
OCES	 4964⊡	the requirement.) Ocean Science and Technology Capstone Project Research	3				!				3		3				
OCES OCES	4974 4984	Ocean Science and Technology Research Project I Ocean Science and Technology Research Project II	3 3														
	3500□ 4500	IRE Research Project I	3 3				<u> </u>										
ENVS ENVS	3001** 3004**	Pollution Monitoring and Measurement** Global Climate Change**	3				i —			3	3	[3]	3				
	□ 1010□	Note: CHEM 1010 OR CHEM 1020 General Chemistry IA	3 3		(3)		1				5		0				
	1020	General Chemistry IB General Chemistry II	3		(3)	3	i—										
LIFS		Note: Students with level 3 or above in HKDSE 1x Biology are	0-3				<u> </u>						3				
LIFS LIFS	1901 1902	exempted from taking LIFS 1901 General Biology I General Biology II	3			(3)							0				
MATH	1902	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND	4-7				(3)						0				
MATH	0 10120	(MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Celouide ID	4				:			1							
	1013 - 1014 - 1020 -	Calculus IB Calculus II Accelerated Calculus	3		(3)	(3)	1			1			0				
MATH⊡ MATH⊡ MATH	1020 1023 1024	Accelerated Calculus⊡ Honors Calculus I⊡ Honors Calculus II	4 3 3				i										
PHYS PHYS	1024	Note: PHYS 1111 OR PHYS 1112 OR PHYS 1312 General Physics I	3				i										
PHYS⊡ PHYS	1112□ 1312	General Physics I with Calculus Honors General Physics I	3		(3)		<u> </u>						0				
COMP	1021 3025	Introduction to Computer Science Science Communication in English (Environmental Science)	3				(3)						0				
							!	L	3				3				
OCES/ENVS/LIFS/ ATH/ISDN	W.	Ocean Science and Technology Electives (Courses from the specified elective list. Students taking the Marine Ecology Option must use ENVS 4001 (in the tar particular or CCES 4003) and ENVE 4200 (in the tar particular or end of the target of target of the target of	12														
	1	4001 (to be re-coded as OCES 4203) and ENVS 4301 (to be re-coded as OCES 4301) to count towards this elective requirement, while those taking the Oceanography Option must use OCES 3201 and OCES 3202. Courses					!		3	3	3	3	12				
		the Oceanography Option must use OCES 3201 and OCES 3202. Courses taken to fulfill the Track/Option requirements may not be counted towards this elective requirement.)								1							
Onthe T		ed credits for Major Required Courses and Electives	65-74										49				
Option Requir Marine Ecology C																	
OCES	-	Marine Ecology Electives (2 courses from the specified elective list)	6				i				3	3	6				
		Required credits for Marine Ecology Option	6										6				
Al Require																	
COMP/ISOM	ed Background	Note: COMP 1021 OR COMP 1022P OR ISOM 3230	3														
COMP	1021	Introduction to Computer Science	3				(3)						0				
	1022P 3230	Introduction to Computing with Java Business Applications Programming	3														
матн матн	1014	Note: MATH 1004 OR MATH 1020 OR MATH 1024	3-4			(3)							0				
MATH MATH MATH	1014 1020 1024	Calculus II Accelerated Calculus Honors Calculus II	3 4 3			(3)							0				
SOM/MATH	1024	Honors Calculus II Note: ISOM 2500 OR MATH 2411	3-4				i 👘										
SOM MATH	2500 2411	Business Statistics Applied Statistics	3 4			3							3				
		d credits for Al Recommended Background Courses	9-11										3				
Major Require	ed Courses and 2010A	Electives Cross-disciplinary Seminar in Artificial Intelligence	0				0						0				
EMIA	2020	Cross-disciplinary Design Thinking	3				3						3				
	2014	Note: COMP 2011 OR COMP 2012 OR COMP 2012H	4-5														
COMP COMP COMP	2011 2012 2012H	Programming with C++ Object-Oriented Programming and Data Structures	4					4					4				
COMP	12172	Honors Object-Oriented Programming and Data Structures Note: COMP2211 OR COMP3211	5				_										

COMP	2012H	Honors Object-Oriented Programming and Data Structures	5											
COMP		Note: COMP2211 OR COMP3211	3											
COMP	2211	Exploring Artificial Intelligence	3						3				3	
COMP	3211	Fundamentals of Artificial Intelligence	3											
COMP/EMIA/MATH		Note: COMP 4211 OR EMIA 4110 OR MATH 4432	3											
COMP	4211	Machine Learning	3								3		3	
EMIA	4110	Practical Machine Learning	3											
MATH	4432	Statistical Machine Learning	3											
EMIA		Note: EMIA 4990 OR EMIA 4991	0-3				i							
EMIA	4990	Interdisciplinary Capstone Design	0								0		0	
EMIA	4991	Interdisciplinary Capstone Project	3											
SBM/SENG/		Note: Students taking EMIA4990 should take a minimum of 9 credits;	6-9											
SSCI/IPO		students taking EMIA4991 should take a minimum of 6 credits												
		AI Electives								3		6	9	
	Requ	ired credits for AI Required Courses and Electives	22-23										22	
University (CORE													
CORE	C3 - C12	U CORE - Others	30				6	6		6	6	6	30	
CORE	C1 & C2	U CORE - English Language	6		3	3	·						6	
		Sub-total for University CORE	36										36	
									cl. free cre	dits)				
							ļ							
					15	19	19	19	18	18	21	18		
							L							
							· · ·	/o option)						
Notes:							<< De	claratio	on of m	ajor				
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Notes:

- The course code will be changed to OCES 3001 starting from Fall, 2021-22.
- **Remarks on course(s): ENVS 3001: Th ENVS 3001: Th ENVS 3004: Th

E-RVS 3001: The course code will be changed to UCES 3001 starting from Fail, 2021-22.
 ENVS 3004: The course tills will be changed to OCES 4001 starting from Fail, 2021-22.
 ENVS 3004: The course code will be changed to OCES 4001 starting from Fail, 2021-22.
 ENVS 3004: The course code will be changed to OCES 4001 starting from Fail, 2021-22.
 ENVS 3004: The course code will be changed to "Ocean and Climate Change" starting from Fail, 2021-22.
 ENVS 3004: The course code will be changed to "Ocean and Climate Change" starting from Fail, 2021-22.
 ENVS 3004: The course tills will be changed to "Ocean and Climate Change" starting from Fail, 2021-22.
 SThe content of this example is an draessawilly examinent to an origin starting from Fail, 2021-22.
 For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

2020-21 OST (4Y) (2020-21 intake)

The Hong Kong University of Science and Technology School of Science An Example on Student's Pathway

<< Declaration of major

School:		School of Science					<< De		on of m	-	(i.e. St	udu Potto	(m)			
Department: Program:		Department of Physics BSc in Physics + Artificial Intelligence			Backgro	und: HK	DSF 4 C		tudent's Pathway	1		udy Patte	ern)			
							Background: HKDSE 4 Core + 2 Elec (incl. 1/2x PHYS) Profile: Normative. Students to graduate with PHYS major without option.									
Course	Course Code	Course Title / Courses List														
Course Offering Dept	Course Code	Course Title / Courses List		Major		_		_		_		_				
course code prefix)			Q	Pre-requisit	Year 1 Fa	Year 1 Spring	Year 2 Fa	Year 2 Spring	Year 3 Fal	Year 3 Spring	Year 4 Fal	Year 4 Sprin	Sub-tota			
School Req	uirements		Credits	lisite	Fall	oring	2 Fall	pring	3 Fall	pring	Fall	pring	total	Remarks		
SCIE	1000	Science School Induction Note: COMP 1021 OR COMP 1022P OR COMP 2011	0 3-4		0	0	[0			
COMP COMP COMP ANG	1021 1022P 2011 2010	Introduction to Computer Science Introduction to Computing with Java Programming with C++	3 3 4 3				3						3			
PHYS	1111	English for Science I Note: PHYS 1111 OR PHYS 1112 OR PHYS 1312 General Physics I	3 3	œ	3		ļ ļ	3					3			
PHYS PHYS PHYS PHYS	1112 1312 1114	General Physics I with Calculus Honors General Physics I Note: PHYS 1114 OR PHYS 1314 General Physics II	3 3 3	æ		3							3			
PHYS	1314 1004	Honors General Physics II Chemistry in Everyday Life	3	8	3	5							3			
CHEM CHEM CHEM	1010 1020 1030	General Chemistry IA General Chemistry IB General Chemistry II	3 3 3				ļ						0 0 0			
CHEM	1050 1055	Laboratory for General Chemistry I Laboratory for General Chemistry I	1										0			
lifs lifs	1030 1901	Environmental Science General Biology I	3			3							0 3			
LIFS LIFS LIFS	1902 1903 1904	General Biology II Laboratory for General Biology I Laboratory for General Biology II	3 1 1										0			
JFS JFS	1930 2210	Nature of Life Sciences Biochemistry I	3				ļ						0 0 0			
МАТН МАТН	1012 1013	Calculus IA Calculus IB	4		3								0			
ИТН ИАТН	1014 1020	Calculus II Accelerated Calculus Heaver Colouide I	3 4 2			3							3			
MATH MATH MATH	1023 1024 2023	Honors Calculus I Honors Calculus II Multivariable Calculus	3 3 4				4						0			
матн МАТН МАТН	2023 2121 2131	Linear Algebra Honors in Linear and Abstract Algebra I	4 4 4				4 {4}					<u> </u>	4 0 0			
DCES PHYS	1030 1001	Environmental Science Physics and the Modern Society	3 3										0			
PHYS PHYS	1113 1115 Boguirod are	Laboratory for General Physics I Laboratory for General Physics II	1		1	{1}	!						1 0			
	irements	dits for School / Major Pre-requisite Requirements		I	I				I	I	I	<u> </u>	29			
Major Required PHYS PHYS	d Courses and 1113 1115	Electives Laboratory for General Physics I Laboratory for General Physics II	1		(1)	1	<u> </u>						0			
PHYS	2022 2023	Modern Physics Modern Physics Laboratory	3				3						3			
PHYS PHYS/MATH	2080	Physics Seminar and Tutorial I Note: PHYS 2124 OR MATH 2352 (Students taking the Physics and Mathematics Option may take either MATH 2352 or PHYS	1 3-4				1						1			
PHYS	2124	2124. Other students can only take PHYS 2124 to fulfill the requirement.) Mathematical Methods in Physics I	3				i	3					3			
MATH PHYS PHYS	2352 3032	Differential Equations Classical Mechanics Note: PHYS 3033 OR PHYS 3053 (Students taking IRE Track	4 3 3-4					3					3			
PHYS	3033	or Honors Physics Option can only use PHYS 3053 to fulfill the requirement.) Electricity and Magnetism I	3-4						3				3			
PHYS PHYS	3053	Honors Electricity and Magnetism I Note: PHYS 3036 OR PHYS 3037 (Students taking IRE Track or Honors Physics Option can only use PHYS 3037 to fulfill	4 3-4													
PHYS PHYS PHYS/MATH	3036 3037	the requirement.) Quantum Mechanics I Honors Quantum Mechanics I Note: PHYS 3142 OR MATH 3312 (Students taking the Physics	3				i			3			3			
PHYS/MATH		Note: PHYS 3142 OR MATH 3312 (students taxing the Physics and Mathematics Option may take either MATH 3312 or PHYS 3142. Other students can only take PHYS 3142 to fulfill the requirement.)	3							3			3			
PHYS MATH PHYS	3142 3312 3152	Computational Methods in Physics Numerical Analysis Methods of Experimental Physics I	3 3 3				 		3				3			
PHYS PHYS	3153 4050	Methods of Experimental Physics II Thermodynamics and Statistical Physics	3						-	3	3		3			
PHYS PHYS/SCIE	4080	Physics Seminar and Tutorial II Note: PHYS 4191 OR PHYS 4291 OR (SCIE 3500 AND SCIE 4500) (Students taking IRE Track can only use (SCIE	1 4-6				i				1		1			
		3500 AND SCIE 4500) to fulfill the requirement; those taking Honors Physics Option can only use PHYS 4291 to fulfill the requirement.)									4		4			
PHYS PHYS SCIE	4191 4291 3500	Capstone Project Capstone Research IRE Research Project I	4 6 3													
SCIE PHYS PHYS	4500	IRE Research Protect II Note: PHYS 4811 OR PHYS 4812 OR PHYS 4813 (2 courses out of 3) Contemporary Applications of Physics: Machine Learning in Physics	2 1								_					
PHYS PHYS	4812 4813	Contemporary Applications of Physics: Quantum Information Technology Contemporary Applications of Physics: Atmospheric Physics - Making Sense	1				i				2		2			
иатн иатн	1012	of Weather and Climate Note: ((MATH 1012 OR MATH 1013 OR MATH 1023) AND ((MATH 1014 OR MATH 1024)) OR [MATH 1020] Calculus IA	4-7 4													
HTAN HTAN MATH	1013 1014 1020	Calculus IB Calculus II Accelerated Calculus Honors Calculus I	3 3 4		(3)	(3)							0			
MATH MATH MATH	1023 1024 2023	Honors Calculus II Multivariable Calculus	3 3 4				(4)						0			
MATH MATH MATH ANG	2121 2131 3023	Note: MATH 2121 OR MATH 2131 Linear Algebra Honors in Linear and Abstract Algebra I Science Communication in English (Physics)	4 4 3				4						4			
Al Requiren	Required	I credits for Major Required Courses and Electives	3 53-61							3		E	3 44			
	d Background (Courses Note: COMP 1021 OR COMP 1022P OR ISOM 3230	3													
	1021 1022P 3230	Introduction to Computer Science Introduction to Computing with Java	3 3				(3)						0			
SOM MATH MATH	3230 1014	Business Applications Programming Note: MATH 1004 OR MATH 1020 OR MATH 1024 Calculus II	3 3-4 3			(3)							0			
MATH MATH SOM/MATH	1014 1020 1024	Accelerated Calculus Honors Calculus Note: ISOM 2500 OR MATH 2411	4 3 3-4													
SOM MATH	2500 2411	Business Statistics Applied Statistics	3 4			3							3			
Major Required	Required of d Courses and 2010A	Credits for AI Recommended Background Courses Electives Cross-disciplinary Seminar in Artificial Intelligence	9-11 0				0						3 0			
EMIA	2020	Cross-disciplinary Design Thinking Note: COMP 2011 OR COMP 2012 OR COMP 2012H	3 4-5				3						3			
	2011 2012 2012H	Programming with C++ Object-Oriented Programming and Data Structures	4 4 5					4					4			
COMP COMP COMP COMP	2012H 2211 3211	Honors Obiect-Oriented Proorammino and Data Structures Note: COMP2211 OR COMP3211 Exploring Artificial Intelligence Fundamentals of Artificial Intelligence	5 3 3						3				3			
	4211 4110	Note: COMP 4211 OR EMIA 4110 OR MATH 4432 Machine Learning	3								3		3			
EMIA MATH	4110 4432	Practical Machine Learning Statistical Machine Learning Note: EMIA 4990 OR EMIA 4991	3 3 0-3													
EMIA	4990 4991	Interdisciplinary Capstone Design Interdisciplinary Capstone Project Note: Students taking EMIA4990 should take a minimum of 9 credits;	0 3 6-9								0		0			
EMIA EMIA		Note: Students taking EMIA4990 should take a minimum of 9 credits; students taking EMIA4991 should take a minimum of 6 credits	0.9							3		6	9			
EMIA		AI Electives		1 million 1												
emia emia BBM/SENG/ SSCI/IPO		Al Electives ired credits for Al Required Courses and Electives	22-23										22			
EMIA EMIA SBM/SENG/ SSCI/IPO University (CORE	CORE C3 - C12	U CORE - Others	30		3	3		3	6	3	3	9	30			
EMIA EMIA SBM/SENG/ SSCI/IPO University (CORE	I ired credits for AI Required Courses and Electives			3	3	Ter		6 ccl. free cre		3	9				

Notes: IN 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 course 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.

2020-21 PHYS (4Y) (2020-21 intake)