Four-Year Study Plan of Data Science Programme (2020 cohort)

Rev 20230911

Course Code	Course Title	Year One			Year Two		Year Three		Year Four	
		Sem 1	Sem 2	Summer/ Winter	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
I. Major Required Courses (42 Units)										
MATH1003	Linear Algebra	3								
MATH1073	Calculus I	3								
COMP2013	Object-Oriented Programming		3							
MATH2003	Discrete Structures		3							
DS2003	Fundamentals of Database Systems				3					
DS2013	Data Processing Workshop I				1					
STAT2003	Advanced Statistics				3					
COMP2003	Data Structures and Algorithms					3				
DS3003	Data Processing Workshop II					1				
STAT2013	Regression Analysis					3				
COMP3023	Design and Analysis of Algorithms						3			
DS4013	Data Mining (For DS students)						3			
DS3013	Data Processing Workshop III							1		
DS4003	Optimization Methods							3		
DS4023	Machine Learning							3		
DS4004	Final Year Project I (DS)								3	
II. Major Elective Courses (18 Units)										
ME01 ME02 ME03 ME04 ME05 ME06							3	6	6	3⑤
III. General Education Core Courses (32 Units)										
CHI1053	University Chinese (Morality and Foundations of Law)	3								
CHI1063	Chinese Culture and Modern China					3				
CHI1073	Contemporary Chinese Society and Thoughts (Theories)					3				
CHI1083	Contemporary Chinese Society and Thoughts (Social Practice)					0				
CHI1093	Contemporary World and China②					0				
GCLA1903	English I	3								
GCLA1913	English II		3							
GCLA1923	English III				3					
GCLA1933	English IV					3				
GCIT1XX3	Information Management Technology①	3								
GCNU1XX3	Numeracy①		3							
GCPE1XX3	Physical Education①	1	1							
GCVM1013	Applied Ethics in Science and Technology				3					
IV. General Education Distribution Courses (12 Units)										
GDBM1XX3	Foundation Course in Business and Management①		3							
GDHS1XX3	Foundation Course in Humanities and Social Sciences①					3				
GDFL1XX3	Foundation Course in Foreign Language①						3			
GDHC1XX3	Foundation Course in World History and Civilisation①				3					
V. Whole Person Education Experiential Learning Modules (4 Units)										
WPEX Module I	WPEX1003 Experiential Development	1								
WPEX Module II	WPEX1013 Emotional Intelligence		1							
WPEX Module III	WPEX2003 Sports Culture①, or WPEX2013 Experiential Arts①				1					
WPEX Module IV	WPEX2023 Voluntary Service①, or WPEX2033 Environmental Awareness①					1				
VI. Free Elective Courses (24 Units)										
FE01 FE02 FE03 FE04 FE05 FE06 FE07 FE08			3	3④			6	6④	6	
Total Units: 132		**17**	**20**	**3**	**17**	**20**	**18**	**19**	**15**	**3**

① 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.

② This course will take the form of lecture series. Students are required to attend and submit notes for at least 10 lectures within their first two years of study.

③ CHI1103 Introduction to Modern Social Theories will be offered under this category.
④ Students should take one FE(ENG) course under this category.
⑤ Students who continue with the final year project in the second semester of Year 4 should register DS4005 Final Year Project II (DS) as a major elective during the Online Course Selection (or Course Add/Drop) period.

ME Course List of DS (2020 cohort)

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Course Code	Course Title	Units
AI3133	Natural Language Processing	3
COMP1003	Computer Organisation	3
COMP3003	Data Communications and Networking	3
COMP3033	Operating Systems	3
COMP3063	Software Engineering	3
COMP3073	Introduction to Robotics	3
COMP3083	Numerical Computation	3
COMP3103	Design Patterns	3
COMP3123	Software Testing	3
COMP3163	Mobile Application Development	3
COMP3173	Compiler Construction	3
COMP3183	Financial Computing	3
COMP4003	Theory of Computation	3
COMP4023	Computer and Network Security	3
COMP4033	Computer Graphics	3
COMP4053	Database System Implementation	3
COMP4063	Digital Media Computing	3
COMP4073	Distributed Computing Systems	3
COMP4093	Internet and the World Wide Web	3
COMP4113	Computer Vision and Pattern Recognition	3
COMP4123	Information Retrieval and Search Engine	3
COMP4143	Introduction to Web Intelligence	3
COMP4153	Quantum Finance and Intelligent Financial Trading Systems	3
COMP4163	Neural Networks and Deep Learning	3
COMP4173	Digital Image Processing	3
DS2033	Linux System Management and Programming	3
DS3023	Digital Logic Design	3
DS3033	Technical Communication	3
DS3053	Requirements Engineering for Data Science Projects	3
DS4005	Final Year Project II (DS)*	3
DS4033	Text Mining and Analytics	3
DS4043	Introduction to Statistical Computing	3
DS4053	Introduction to Bioinformatics	3
DS4063	Social Computing	3
DS4073	Introduction to Data Visualisation	3
DS4083	Big Data Analytics	3
DS4093	Introduction to Recommender System	3
MATH1083	Calculus II	3
STAT3003	Survey Sampling	3
STAT3033	Bayesian Statistics	3
STAT4003	Experimental Design	3
STAT4013	Multivariate Analysis	3
STAT4043	Categorical Data Analysis	3
STAT4063	Time Series Analysis	3

* Students who continue with the final year project in the second semester of Year 4 should register DS4005 Final Year Project II (DS) as a major elective during the Online Course Selection (or Course Add/Drop) period.