Four-Year Study Plan of Data Science Programme (2023 cohort)

Rev 20231106

Course Code	Course Title	Year One		Year Two		Year Three		Year Four	
		Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
I. Major Required Courses (54 Units)									
COMP1023	Foundations of C Programming	3							
MATH1003	Linear Algebra	3							
MATH1123	Calculus for Science and Engineering	3							
COMP2013	Object-Oriented Programming		3						
DS1023	Advanced Mathematics for Data Science		3						
MATH2003	Discrete Structures		3						
COMP2003	Data Structures and Algorithms			3					
DS2043	Data Processing Workshop I			3					
STAT2003	Advanced Statistics			3					
COMP3013	Database Management Systems				3				
DS3043	Data Processing Workshop II				3				
STAT2013	Regression Analysis				3				
COMP3023	Design and Analysis of Algorithms					3			
OR4023	Optimization					3			
STAT4073	Data Mining					3			
DS4023	Machine Learning						3		
COMP4163	Neural Networks and Deep Learning							3	
DS4004	Final Year Project I (DS)							3	
II. Major Elective Courses (15 Units)									
ME01 ME02 ME03 ME04 ME05						3	6	3	3③
III. University Core Courses (37 Units)									
UCLC1003	University Chinese	3							
UCLC1013	English for Academic Purposes I	3							
UCLC1023	English for Academic Purposes II		3						
UCLC1033	English for Academic Purposes III				3				
CHI1103	Introduction to Modern Social Theories					3			
CHI1203	Morality and Foundations of Law			3					
CHI1063	Chinese Culture and Modern China				3				
CHI1073	Contemporary Chinese Society and Thought I		3						
CHI1253	Contemporary Chinese Society and Thought II		3						
CHI1193	Contemporary World and China①				2				
MT1003	Military Training	2							
WPEX1013	Emotional Intelligence		1						
WPEX2013	Experiential Arts②				1				
WPEX2023/ WPEX2033	Voluntary Service②, or Environmental Awareness②			1					
UCHL1XX3	Healthy Lifestyle②	1	1		1				
IV. General Education Courses (18 Units)									
Level 1 Foundational Courses	History and Civilization②			3					
	Quantitative Reasoning②	3							
	Values and the Meaning of Life④		3						
Level 2 Interdisciplinary Thematic Courses	Culture, Creativity and Innovation②, or Science, Technology and Society②, or Sustainable Communities②				3⑤	3⑤			
Level 3 GE Capstone Courses	Service-Learning Course②, or Service Leadership Education Course②, or Experiential Learning Course②, or Interdisciplinary Independent Study②						3		
V. Free Elective Courses (24 Units)									
FE01 FE02 FE03 FE04 FE05 FE06 FE07 FE08				3		3	6	6	6
Total Units: 148		**21**	**23**	**19**	**22**	**21**	**18**	**15**	**9**

① This 2-unit course requires student to attend at least 10 lectures within his/her first two years of study.

② 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.

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.

④ Students are required to take GFVM1033 Ethics in An Era of Artificial Intelligence and Robotics or GFVM1043 Ethics in Daily Life and Life Sciences under this category.

⑤ Students are not allowed to take GTSC2093 IT for Success in Everyday Life and Work under this category.

ME Course List of DS (2023 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
COMP4173	Digital Image Processing	3
COMP4223	Deep Learning for Computer Vision	3
COMP4263	3D Computer Vision	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
DS3063	Computational Statistics and Programming	3
DS4005	Final Year Project II (DS)*	3
DS4033	Text Mining and Analytics	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
MATH1163	Advanced Calculus	3
STAT3003	Survey Sampling	3
STAT3033	Bayesian Statistics	3
STAT3073	Statistical Computing	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.