CURRICULUM FOR COMPUTER ENGINEERING
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (CEDA)
(FIRST YEAR ADMISSION)
AY2025 Intake Onwards

	Major Requirements			Interdisciplinary Collaborative Core				
SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	School Core	CNYSP-Core	MPE	CC	Professional Series	Care, Serve, Learn	BDE	Total AU
1	16 [7]	23	0	2	3 [3]	0	0	**44 [10]**
2	21	10	0	8	0	3	0	**42**
3	21	0	3	0	6	0	12	**42**
4	8	0	9	0	0	0	6	**23**
Total	**66 [7]**	**33**	**12**	**10**	**9 [3]**	**3**	**18**	**151 [10]**

[ ] AU of courses that could be used to fulfil Core/MPE requirement and second major requirement concurrently

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
SC1003^	Introduction to Computational Thinking and Programming	PS	3	Nil
CC0015	Healthy Living & Wellbeing	CC	2	Nil
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
CY1007	Climate Change	CNY-Core	3	CNYSP Courses
SC1004^	Linear Algebra for Computing	C	4	**MH1810, SC1003**
SC1005	Digital Logic	C	3	Nil
SC1006	Computer Organisation & Architecture	C	3	**SC1005 (co-req)**
SC1007^	Data Structures and Algorithms	C	3	**SC1003**
SC1008	C and C++ Programming	C	3	SC1003
			19	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
SC2000^	Probability and Statistics for Computing	C	3	**MH1810**
SC2104	Sensors, Interfacing & Digital Control	C	3	**SC1006**
SC2107	Microprocessor System Design and Development	C	3	**SC1006**
MH1812	Discrete Mathematics	C	3	Nil
SP0061	Science & Technology for Humanity	CC	3	Only for Premier Scholars Programme Students
	Tech-For-Good (T4G)	CSL	3	Nil
			21	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
CY0002	Ethics	CNY-Core	3	CNYSP Course
CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
SC2001	Algorithm Design and Analysis	C	3	**SC1007, MH1812**
SC2002	Object Oriented Design & Programming	C	3	**SC1003**
SC2103	Digital System Design	C	3	**SC1005**
CC0006	Sustainability: Society, Economy & Environment	CC	3	Nil
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	Nil

			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC2079	Multidisciplinary Design Project	C	4	Year 3 Standing
EG1001	Engineers in Society	C	2	Nil
SC2207	Introduction to Database	BDE	3	**SC2001**
SC4020	Data Analytics and Mining	BDE	3	**SC2001**
SC4024	Data Visualization	BDE	3	**SC1003, SC2000**
SCXXXX	Major PE 1	MPE	3	
MLXXXX	Profession Preparation	PS	1	
			19	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SC2005	Operating Systems	C	3	**SC1006, SC1007**
SC2006	Software Engineering	C	3	**SC2002**
SC2008	Computer Networks	C	3	**CY1602, SC2000**
SC3102	Signal, Systems and Transform	C	3	**CY1602**
SC3103	Embedded Programming	C	3	**SC2107**
XXXXXX	DA Elective 1	BDE	3	
			18	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite
SC3910	Professional Attachment	PS	5	Year 3 Standing
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC4211	CNYSP Overseas Final Year Project	C	8	CNYSP Course
			8	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
SCXXXX	Major PE 2	MPE	3	
SCXXXX	Major PE 3	MPE	3	
SCXXXX	Major PE 4	MPE	3	
			15	
	Total AU for Graduation:		151	

^ *These courses can be double-counted towards both CE as well as the Second Major in Data Analytics, up to max of 12AUs.*

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
Core	SC2000	Probability and Statistics for Computing	3	1	MH1810
Core	SC1004	Linear Algebra for Computing	3	2	MH1810, SC1003
Core	SC1003	Introduction to Computational Thinking & Programming	3	1	-
Core	SC1007	Data Structures and Algorithms	3	1, 2	SC1003
BDE	SC2207	Introduction to Database	3	1, 2	SC2001
BDE	SC4020	Data Analytics and Mining	3	1	SC2001
BDE	SC4024	Data Visualization	3	1	SC1003, SC2000

Suggested Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
BDE	SC3020	Database System Principle	3	2	SC2107
BDE	SC4021	Information Retrieval	3	2	SC2001
BDE	SC4022	Network Science	3	2	SC2001