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

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	**Major Requirements**			**Interdisciplinary Collaborative Core**		**BDE**	**Total AU**
	School Core	**CNYSP-Core**	**MPE**	**CC**	**Professional Series**	**Care, Serve, Learn**	
1	16 [7]	23	0	2	3 [3]	0	0	**44 [10]**
2	21	6	0	8	0	3	4	**42**
3	21	0	3	0	6	0	12	**42**
4	8	0	9	0	0	0	6	**23**
Total	**66 [7]**	**29**	**12**	**10**	**9 [3]**	**3**	**22**	**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
SC5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
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
SC5915	Undergraduate Research	BDE	4	2-semester long, course registered only in Sem 2
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**
XXXXX	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**
XXXXX	DA Elective 2	BDE	3	
XXXXX	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