

**AY2023-24 AND LATER COHORTS CURRICULUM FOR COMPUTER ENGINEERING  
WITH CN YANG SCHOLARS PROGRAMME  
SECOND MAJOR IN DATA ANALYTICS (CEDA)  
(FIRST YEAR ADMISSION)**

Last Updated : 10-Mar-23

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYS Core	MPE	CC	FC	BDE	Total AU
1	12	23	0	5	3	0	43
2	26	10	0	8	0	0	44
3	19	0	6	0	5	12	42
4	8	0	6	0	0	6	20
<b>Total</b>	<b>65</b>	<b>33</b>	<b>12</b>	<b>13</b>	<b>8</b>	<b>18</b>	<b>149</b>

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
CY1001	Cell	CNY-Core	3	CNYS 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	C	3	Nil
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	Nil
			<b>22</b>	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
CY1007	Climate Change	CNY-Core	3	CNYS Courses
SC1004^	Linear Algebra for Computing	C	3	<b>MH1810, SC1003</b>
SC1005	Digital Logic	C	3	Nil
SC1006	Computer Organisation & Architecture	C	3	<b>SC1005 (co-req)</b>
SC1015	Introduction to Data Science and Artificial Intelligence	FC	3	<b>SC1003</b>
CC0002	Navigating the Digital World	CC	2	Nil
			<b>17</b>	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite
CY2003	Research Attachment 3	CNY-Core	4	CNYS Course
	Overseas Learning Trip			
			<b>4</b>	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
CY0002	Ethics	CNY-Core	3	CNYS Course
SC1007^	Data Structures and Algorithms	C	3	<b>SC1003</b>
SC2104	Sensors, Interfacing & Digital Control	C	3	<b>SC1006</b>
SC2107	Microprocessor System Design and Development	C	3	<b>SC1006</b>
MH1812	Discrete Mathematics	C	3	Nil
SP0061	Science & Technology for Humanity	CC	3	Only for Premier Scholars Programme Students
EG1001	Engineers in Society	C	2	Nil
			<b>20</b>	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYS Course
CY2001	Research Attachment 1	CNY-Core	4	CNYS Course 2-semester long, course registered only in Sem 2 (similar to URECA)
SC2000^	Probability and Statistics for Computing	C	3	<b>MH1810</b>
SC2001	Algorithm Design and Analysis	C	3	<b>SC1007, MH1812</b>
SC2002	Object Oriented Design & Programming	C	3	<b>SC1003</b>
SC2103	Digital System Design	C	3	<b>SC1005</b>
CC0006	Sustainability: Society, Economy & Environment	CC	3	Nil
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	Nil
			<b>24</b>	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC2079	Multidisciplinary Design Project	C	4	Year 3 Standing
SC2207	Introduction to Database	BDE	3	<b>SC2001</b>
SC4020	Data Analytics and Mining	BDE	3	<b>SC2001</b>
SC4024	Data Visualization	BDE	3	<b>SC1003, SC2000</b>
SCXXX	Major PE 1	MPE	3	

SCXXXX	Major PE 2	MPE	3	
			<b>19</b>	

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	
			<b>18</b>	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite
SC3080	Professional Attachment	FC	5	Year 3 Standing
			<b>5</b>	

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

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 3	MPE	3	
SCXXXX	Major PE 4	MPE	3	
			<b>12</b>	

Total AU for Graduation: **149**

*^ These courses are double-counted towards both CE as well as the Second Major in Data Analytics.*

<b>Compulsory Courses for Second Major in Data Analytics</b>					
<b>Course Type</b>	<b>Course Code</b>	<b>Course Title</b>	<b>AU</b>	<b>Offering Sem</b>	<b>Pre-req</b>
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

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