

**AY2024-25 CURRICULUM FOR BACHELOR OF ENGINEERING (INFORMATION ENGINEERING & MEDIA)
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (IEDA)
(FIRST YEAR ADMISSION)**

Last Updated : 3-May-24

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYS Core	MPE	CC	FC	BDE	Total AU
1	11	23	0	5	0	0	39
2	17	10	0	8	3	0	38
3	15	0	18	0	5	8	46
4	11	0	6	0	0	10	27
Total	54	33	24	13	8	18	150

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
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	
EG1001	Engineers in Society	C	2	
CC0002	Navigating the Digital World	CC	2	
			20	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYS Course
IE1005^	From Computational Thinking to Programming	C	3	
IE2108^	Data Structure and Algorithm in Python	C	3	
IM1002	Analog Electronics	C	3	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			15	

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

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYS Course
DA1000	Thinking and Communicating Visually I	C	3	
IE0005	Introduction to Data Science and Artificial Intelligence	FC	3	IE1005
IE2106	Engineering Mathematics I	C	3	CY1602
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			17	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
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)
IM1003	Object-Oriented Programming	C	3	
IE2104	Digital Electronics	C	3	
IE2107^	Engineering Mathematics II	C	3	CY1602
IM2073	Introduction to Design & Project	C	2	
SP0061	Science & Technology for Humanity	CC	3	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
IE3017	Computer Communications	C	3	IE2106
IE2110	Signals and Systems	C	3	CY1601+CY1602
IM3180	Design & Innovation Project	C	3	IM2073^
IE4483	Artificial Intelligence & Data Mining	BDE	3	IE2107 & IE0005
IE4491^	Probability Theory & Applications	MPE	3	IE2110 Technical Elective 1
IEXXXX	Prescribed Elective 1	MPE	3	
SC4024	Data Visualization	BDE	3	IE1005 & IE2106/IE4491
			21	

IE4491 will not be offered until further notice.

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
IE4001	Software Engineering	C	3	
IEXXXX	Prescribed Elective 2	MPE	3	
IEXXXX	Prescribed Elective 3	MPE	3	
IE4414	Machine Learning Design & Application	BDE	2	EE/IE4483
IE4XXX	Design Elective 1	MPE	3	
IE4XXX	Technical Elective 2	MPE	3	
DA2002	Thinking and Communicating Visually II	C	3	DA1000
			20	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
IM3276	Professional Attachment	FC	5	

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YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
IM4081	CNYSO Overseas Final Year Project	C	8	CNYSO Course
			8	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
DA3000	Thinking and Communicating Visually III	C	3	DA1000
IE4XXX	Design Elective 2/ Technical Elective 3	MPE	3	
IE4XXX	Technical Elective 3/4	MPE	3	
BC2402	Designing & Developing Databases	BDE	4	
IE4497	Pattern Recognition & Machine Learning	BDE	3	IE2106
MS4671	Introduction to Materials Simulation	BDE	3	IE1005 & IE0005
			19	
Total AU for Graduation:			150	

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

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	IE4491	Probability Theory & Applications	3	1	IE2110/IM2004
Core	IE2107	Engineering Mathematics II	3	2	CY1602
Core	IE1005	From Computational Thinking to Programming	3	1	-
Core	IE2108	Data Structures & Algorithms	3	1	-
BDE	BC2402	Designing & Developing Databases	4	1	-
BDE	IE4483	Artificial Intelligence & Data Mining	3	1	EE2107 & IE0005
BDE	SC4024	Data Visualization	3	1	IE1005 & IE2106/IE4491

Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
BDE	IE4424	Machine Learning Design & Application	2	2	IE4483
BDE	IE4497	Pattern Recognition & Machine Learning	3	2	EE2006/IE2106
BDE	MS4671	Introduction to Materials Simulation	3	2	IE1005 & IE0005