

**AY2023-24 CURRICULUM FOR BACHELOR OF ENGINEERING (CIVIL)  
WITH CN YANG SCHOLARS PROGRAMME  
SECOND MAJOR IN DATA ANALYTICS (CVDA)  
(FIRST YEAR ADMISSION)**

Last Updated : 19-Apr-23

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYS Core	MPE	CC	FC	BDE	Total AU
1	16	23	0	5	0	0	44
2	17	10	0	5	3	3	38
3	25	0	0	3	5	0	33
4	12	0	3	0	0	18	33
<b>Total</b>	<b>70</b>	<b>33</b>	<b>3</b>	<b>13</b>	<b>8</b>	<b>21</b>	<b>148</b>

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	
CV1011	Mechanics of Materials	C	4	
CC0002	Navigating the Digital World	CC	2	
			<b>22</b>	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Living with Climate Change	CNY-Core	3	CNYS Course
CV1013	Civil Engineering Materials	C	3	
CV1014^	Introduction To Computational Thinking	C	3	
CV1711	Engineering Drawing and 3D Building Information Modelling	C	1	
CV2019^	Matrix Algebra & Computational Methods	C	3	
EG1001	Engineers In Society	C	2	
CC0005	Healthy Living & Wellbeing	CC	3	
			<b>18</b>	

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			
			<b>4</b>	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYS Course
CV1012	Fluid Mechanics	C	3	
CV2011	Structural Analysis I	C	3	CV1011
CV2013	Engineering Geology & Soil Mechanics	C	3	
CV2711	Civil Engineering Laboratory A	C	1	
CV0003	Introduction to Data Science and Artificial Intelligence	FC	3	CV1014
			<b>16</b>	

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
CV2012	Structural Analysis II	C	3	CV2011
CV2014	Geotechnical Engineering	C	3	CV2013
CV2712	Civil Engineering Laboratory B	C	1	
MH1403	Algorithms and Computing	BDE	3	CV1014
SP0061	Science & Technology for Humanity	CC	3	

ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			<b>22</b>	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV2020	Water Resources Engineering	C	3	CV1012
CV3011	Reinforced Concrete Design	C	3	CV2011
CV3013	Foundation Engineering	C	3	CV2013 & CV2014
CV3014	Transportation Engineering	C	3	
CV3017	Environmental Engineering	C	2	CV1012
MH2814^	Probability & Statistics	C	3	MH1810
CC0006	Sustainability: Society, Economy & Environment	CC	3	
			<b>20</b>	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV4211	CNYSO Overseas Final Year Project	C	8	Year 4 Standing CNYSO Course
			<b>8</b>	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV3915	Professional Attachment	FC	5	Year 3 standing & completed at least 4 semesters of study
			<b>5</b>	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV4012	Project Planning & Management	C	2	Year 4 Standing
CV4711	Seminars & Site Visits	C	1	
CV4XXX	Major Prescribed Elective	MPE	3	Refer to Syllabus
EE4483	Artificial Intelligence & Data Mining	BDE	3	CV2019, CV0003
SC4024	Data Visualization	BDE	3	CV1014, MH2814
XXXXXX	DA Elective 1	BDE	3	
			<b>15</b>	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV3012	Steel Design	C	3	CV2011
CV3016	Construction Technology & Processes	C	3	
CV4912	Integrated Design Project	C	3	Year 4 Standing
SC2207	Introduction to Database	BDE	3	MH1403
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
			<b>18</b>	

Total AU for Graduation: **148**

^ These courses are double-counted towards both CEE 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
Core	MH2814	Probability & Statistics	3	1	MH1810
Core	CV2019	Matrix Algebra & Computational Methods	3	2	-
Core	CV1014	Introduction to Computational Thinking	3	2	-
BDE	MH1403	Algorithms and Computing	3	2	CV1014
BDE	SC2207	Introduction to Database	3	1, 2	MH1403
BDE	EE4483	Artificial Intelligence & Data Mining	3	1	CV2019, CV0003
BDE	SC4024	Data Visualization	3	1	CV1014, MH2814

Electives for Second Major in Data Analytics
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Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
BDE	SC4002	Natural Language Processing	3	1	MH1403
BDE	SC4021	Information Retrieval	3	2	MH1403
BDE	SC4022	Network Science	3	2	MH1403

List of Eligible Electives can be found at the following link: <https://www.ntu.edu.sg/engineering/admissions/ug/allprogrammes/highlights/da>