

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

Last Updated : 21-Mar-25

**SUMMARY OF ACADEMIC UNIT REQUIREMENT**

Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	16	23	0	5	0	0	<b>44</b>
2	17	10	0	5	3	3	<b>38</b>
3	25	0	0	3	5	0	<b>33</b>
4	12	0	3	0	0	18	<b>33</b>
<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	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	
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	CNYSP 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	CNYSP Course
	Overseas Learning Trip			
			<b>4</b>	

**YEAR 2 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
CV1012	Fluid Mechanics	C	3	
CV2011	Structural Analysis I	C	3	<b>CV1011</b>
CV2013	Engineering Geology & Soil Mechanics	C	3	
CV2711	Civil Engineering Laboratory A	C	1	
CV0003	Introduction to Data Science and Artificial Intelligence	FC	3	<b>CV1014</b>
			<b>16</b>	

**YEAR 2 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course
CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course

CV2012	Structural Analysis II	C	3	<b>CV2011</b>
CV2014	Geotechnical Engineering	C	3	<b>CV2013</b>
CV2712	Civil Engineering Laboratory B	C	1	
<b>MH1403</b>	<b>Algorithms and Computing</b>	<b>BDE</b>	<b>3</b>	<b>CV1014</b>
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	<b>CV1012</b>
CV3011	Reinforced Concrete Design	C	3	<b>CV2011</b>
CV3013	Foundation Engineering	C	3	<b>CV2013 &amp; CV2014</b>
CV3014	Transportation Engineering	C	3	
CV3017	Urban Water Circularity	C	2	<b>CV1012</b>
<b>MH2814^</b>	<b>Probability &amp; Statistics</b>	C	3	<b>MH1810</b>
CC0006	Sustainability: Society, Economy & Environment	CC	3	
			<b>20</b>	

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

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV3910	Professional Attachment	FC	5	Year 3 standing & completed at least 4
			<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 on Built Environment	C	1	
CV4XXX	Major Prescribed Elective	MPE	3	Refer to Syllabus
<b>EE4483</b>	<b>Artificial Intelligence &amp; Data Mining</b>	<b>BDE</b>	<b>3</b>	<b>CV2019, CV0003</b>
<b>SC4024</b>	<b>Data Visualization</b>	<b>BDE</b>	<b>3</b>	<b>CV1014, MH2814</b>
<b>XXXXXX</b>	<b>DA Elective 1</b>	<b>BDE</b>	<b>3</b>	
			<b>15</b>	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CV3012	Steel Design	C	3	<b>CV2011</b>
CV3016	Construction Technology & Processes	C	3	
CV4912	Integrated Design Project	C	3	Year 4 Standing
<b>SC2207</b>	<b>Introduction to Database</b>	<b>BDE</b>	<b>3</b>	<b>MH1403</b>
<b>XXXXXX</b>	<b>DA Elective 2</b>	<b>BDE</b>	<b>3</b>	
<b>XXXXXX</b>	<b>DA Elective 3</b>	<b>BDE</b>	<b>3</b>	
			<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	1 & 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

Suggested Electives for Second Major in Data Analytics					
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