

**AY2022-23 CURRICULUM FOR ENVIRONMENTAL EARTH SYSTEMS SCIENCE (ECOLOGY AND ECOSYSTEMS)**  
**WITH CN YANG SCHOLARS PROGRAMME\_Internship**  
**(FIRST YEAR ADMISSION)**

Last Updated : 7-Feb-23

**SUMMARY OF ACADEMIC UNIT REQUIREMENT**

Year of Study	School Core	CNYS Core	MPE	CC	FC	BDE	Total AU
1	19	27	0	5	0	0	51
2	18	10	0	8	0	6	42
3	10	0	0	0	3	3	16
4	15	0	0	0	10	0	25
<b>Total</b>	<b>62</b>	<b>37</b>	<b>0</b>	<b>13</b>	<b>13</b>	<b>9</b>	<b>134</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	
ES1001	E2S2 Environment and Society	C	4	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			<b>23</b>	

**YEAR 1 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYS Courses
CY1602	Mathematics II	CNY-Core	4	
ES0001	Physical Environments of Singapore	C	3	
ES1003	E2S2 Solid Earth	C	4	
ES2003	E2S2 Biosphere	C	4	
CC0002	Navigating the Digital World	CC	2	
			<b>20</b>	

**YEAR 1 SPECIAL SEMESTER**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYS Course
ES1006	Introductory Field Experience	C	4	<b>ES1001</b>
	Overseas Learning Trip			
			<b>8</b>	

**YEAR 2 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYS Course
CY1307	Quantum	BDE	3	Students can choose to opt out and replace with any other BDE course (3 AU)
ES2001	Computational Earth Systems Science	C	4	<b>CY1601</b>
ES2802	GIS and the Earth System	C	3	<b>ES1003 + ES2001</b>
BS1008	Bioinformatics and Statistics	C	3	
CC0006	Sustainability: Human, Social, Economics & Environment	CC	3	
			<b>19</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 2-semester long, course registered only in Sem 2 (similar to URECA)
ES2301	Principles of Heredity and Ecological Genetics	C	3	<b>ES2003 + CY1101</b>
MH3511	Data Analysis with Computer	BDE	3	<b>MH2500/BS1008 pre-req for ES3307</b>
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
SP0061	Science & Technology for Humanity	CC	3	
			<b>18</b>	

**YEAR 2 SPECIAL SEMESTER**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES2302	Introduction to Field Ecology	C	2	<b>ES2003</b>
			<b>2</b>	

**YEAR 3 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES2304	Microbes on Natural Ecosystems	C	3	<b>CY1001</b>
ES3307	Experimental Design & Analysis for Ecology	C	4	<b>BS1001, MH3511</b>
XXXXXX	Broadening and Deepening Electives 1	BDE	3	
			<b>10</b>	

**YEAR 3 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES2303	Introduction to Ecology	C	3	<b>CY1001 + ES2003</b>
ES3301	Plant and Animal Physiology	C	3	<b>CY1001 + ES2003 + ES2301</b>
ES0002	Fundamentals of Data Science for Earth and Environmental Systems Science	FC	3	<b>CY1601, ES2001</b>
			<b>9</b>	

**YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES4301	Conservation Biology and Biodiversity	C	3	
ES4111	Overseas Final Year Project	C	12	CNYS Course
			<b>15</b>	

**YEAR 4 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
	Attachment/Internship (10 weeks)	FC	10	
			<b>10</b>	

Total AU for Graduation : **134**

**AY2022-23 CURRICULUM FOR ENVIRONMENTAL EARTH SYSTEMS SCIENCE (GEOSCIENCES)  
WITH CN YANG SCHOLARS PROGRAMME\_Internship  
(FIRST YEAR ADMISSION)**

Last Updated : 7-Feb-23

**SUMMARY OF ACADEMIC UNIT REQUIREMENT**

Year of Study	School Core	CNYS Core	MPE	CC	FC	BDE	Total AU
1	16	27	0	5	0	0	48
2	16	10	0	8	0	3	37
3	9	0	0	0	3	7	19
4	17	0	0	0	10	0	27
<b>Total</b>	<b>58</b>	<b>37</b>	<b>0</b>	<b>13</b>	<b>13</b>	<b>10</b>	<b>131</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	
ES1001	E2S2 Environment and Society	C	4	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			<b>23</b>	

**YEAR 1 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYS Courses
CY1602	Mathematics II	CNY-Core	4	
ES0001	Physical Environments of Singapore	C	3	
ES1003	E2S2 Solid Earth	C	4	
ES2003	E2S2 Biosphere	C	4	
CC0002	Navigating the Digital World	CC	2	
			<b>20</b>	

**YEAR 1 SPECIAL SEMESTER**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYS Course
ES1006	Introductory Field Experience	C	4	
	Overseas Learning Trip			
			<b>8</b>	

**YEAR 2 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYS Course
CY1307	Quantum	BDE	3	Students can choose to opt out and replace with any other BDE course (3 AU)
ES2001	Computational Earth Systems Science	C	4	
ES2802	GIS and the Earth System	C	3	
CC0006	Sustainability: Human, Social, Economics & Environment	CC	3	
			<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 Courses
CY2001	Research Attachment 1	CNY-Core	4	CNYS Course 2-semester long, course registered only in Sem 2 (similar to URECA)
ES2002	Earth Materials	C	3	
ES2004	Sedimentary Geology	C	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
SP0061	Science & Technology for Humanity	CC	3	
			<b>18</b>	

**YEAR 2 SPECIAL SEMESTER**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES2101	Introduction to Geological Field Mapping	C	3	
			<b>3</b>	

**YEAR 3 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3003	Introduction to Geochemistry	C	3	
XXXXXX	Broadening and Deepening Electives 1	BDE	3	
XXXXXX	Broadening and Deepening Electives 2	BDE	4	
			<b>10</b>	

**YEAR 3 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3002	Structural Geology and Tectonics	C	3	
ES3004	Introduction to Geophysics	C	3	
ES0002	Fundamentals of Data Science for Earth and Environmental Systems Science	FC	3	
			<b>9</b>	

**YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3005	Advanced Field Course in Geology	C	5	
ES4111	Overseas Final Year Project	C	12	CNYS Course
			<b>17</b>	

**YEAR 4 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
	Attachment/Internship (10 weeks)	FC	10	
			<b>10</b>	

Total AU for Graduation : **134**

**AY2022-23 CURRICULUM FOR ENVIRONMENTAL EARTH SYSTEMS SCIENCE (SOCIETY AND THE EARTH SYSTEM)  
WITH CN YANG SCHOLARS PROGRAMME\_Internship  
(FIRST YEAR ADMISSION)**

Last Updated : 7-Feb-23

**SUMMARY OF ACADEMIC UNIT REQUIREMENT**

Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	19	27	0	5	0	0	51
2	16	10	0	8	0	3	37
3	12	0	0	0	3	9	24
4	12	0	0	0	10	0	22
<b>Total</b>	<b>59</b>	<b>37</b>	<b>0</b>	<b>13</b>	<b>13</b>	<b>12</b>	<b>134</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	
ES1001	E2S2 Environment and Society	C	4	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			<b>23</b>	

**YEAR 1 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Courses
CY1602	Mathematics II	CNY-Core	4	
ES0001	Physical Environments of Singapore	C	3	
ES1003	E2S2 Solid Earth	C	4	
ES2003	E2S2 Biosphere	C	4	
CC0002	Navigating the Digital World	CC	2	
			<b>20</b>	

**YEAR 1 SPECIAL SEMESTER**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
ES1006	Introductory Field Experience	C	4	<b>ES1001</b>
	Overseas Learning Trip			
			<b>8</b>	

**YEAR 2 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course
CY1307	Quantum	BDE	3	Students can choose to opt out and replace with any other BDE course (3 AU)
ES2001	Computational Earth Systems Science	C	4	<b>CY1601</b>
ES2802	GIS and the Earth System	C	3	
CC0006	Sustainability: Human, Social, Economics & Environment	CC	3	
			<b>16</b>	

**YEAR 2 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
ES2303	Introduction to Ecology	C	3	<b>CY1001, ES2003</b>
ES2201	Law & Economics, Sustainable Development and Environmental Protection	C	3	
ES2202	Global Environmental Politics and Governance	C	3	<b>ES1001, ES2003</b>
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
SP0061	Science & Technology for Humanity	CC	3	
			<b>21</b>	

**YEAR 3 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MH2500	Probability and Introduction to Statistics	BDE	4	<b>CY1601</b>
HE5091	Principles of Economics	C	3	
XXXXXX	Broadening and Deepening Electives 1	BDE	3	
XXXXXX	Broadening and Deepening Electives 2	BDE	2	
			<b>12</b>	

**YEAR 3 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES3201	Coupled Human and Natural Systems	C	3	<b>ES1001</b>
ES3202	Resilient Urban Systems	C	3	<b>ES2802</b>
ES0002	Fundamentals of Data Science for Earth and Environmental Systems Science	FC	3	<b>CY1601, ES2001</b>
MH3511	Data Analysis with Computer	C	3	<b>MH2500/BS1008</b>
			<b>12</b>	

**YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
ES4111	Overseas Final Year Project	C	12	CNYSP Course
			<b>12</b>	

**YEAR 4 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
	Attachment/Internship (20-weeks)	FC	10	
			<b>10</b>	

Total AU for Graduation : **134**