

**AY2022-23 CURRICULUM FOR BACHELOR OF ENGINEERING (BIOENGINEERING)  
WITH CN YANG SCHOLARS PROGRAMME  
(FIRST YEAR ADMISSION)**

Last Updated : 6-May-22

**SUMMARY OF ACADEMIC UNIT REQUIREMENT**

Year of Study	School Core	CNYS Core	MPE	CC	FC	BDE	Total AU
1	6	27	0	5	0	0	38
2	26	10	0	8	0	0	44
3	21	0	0	0	5	3	29
4	9	0	6	0	3	9	27
<b>Total</b>	<b>62</b>	<b>37</b>	<b>6</b>	<b>13</b>	<b>8</b>	<b>12</b>	<b>138</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	
CB1102	Introduction to Chemical and Biomedical Engineering	C	1	
BG1141	Fundamental Biology for Bioengineers	C	3	
CC0002	Navigating the Digital World	CC	2	
			<b>22</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	
EG1001	Engineers in Society	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			<b>12</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
BG2119	Anatomy and Physiology	C	3	
BG2131	Biomaterials	C	3	
BG2142	Biological Thermodynamics	C	3	
BG2211	Introduction to Computational Thinking	C	3	
BG2801	Bioengineering Lab 2A	C	1	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			<b>21</b>	

**YEAR 2 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSB Courses
CY2001	Research Attachment 1	CNY-Core	4	CNYSB Course 2 semester long, course registered only in Sem 2 (similar to URECA)
BG2103	Signal Processing in Biosystems	C	3	
BG2104	Electronics for Biomedical Engineering	C	3	
BG2110	Bioelectricity	C	3	
BG2209	Mechanics for Bioengineers	C	3	
BG2802	Bioengineering Lab 2B	C	1	
CC0007	Science & Technology for Humanity	CC	3	
			<b>23</b>	

**YEAR 3 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1307	Quantum	BDE	3	Students can choose to opt out and replace with any other BDE course (3 AU)
BG3102	Control in Biosystems	C	3	
BG3104	Biomedical Imaging	C	3	
BG3105	Biomedical Instrumentation	C	3	
BG3112	Biofluid Mechanics and Medical Devices	C	3	
BG3801	Bioengineering Lab 3	C	1	
			<b>16</b>	

**YEAR 3 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG4211	CNYSB Overseas Final Year Project	C	8	CNYSB Course
			<b>8</b>	

**YEAR 3 SPECIAL SEMESTER**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG3885	Professional Attachment	FC	5	
			<b>5</b>	

**YEAR 4 SEMESTER 1**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG4104	Machine Learning and Optimization for Bioengineers	C	3	
BG4122	Medical Device Design	C	3	
	BIE PE 1	MPE	3	
	Broadening and Deepening Elective 1	BDE	3	
			<b>12</b>	

**YEAR 4 SEMESTER 2**

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
BG4122	Medical Device Design	C	3	
CB0494	Introduction to Data Science and Artificial Intelligence	FC	3	
	BIE PE 2	MPE	3	
	Broadening and Deepening Elective 2	BDE	3	
	Broadening and Deepening Elective 3	BDE	3	
			<b>15</b>	

Total AU for Graduation : **138**