

**CURRICULUM FOR BACHELOR OF ENGINEERING (MECHANICAL ENGINEERING - MAINSTREAM)**  
**CN YANG SCHOLARS PROGRAMME**  
**SECOND MAJOR IN SUSTAINABILITY (MESN)**  
**(FIRST YEAR ADMISSION)**  
**AY2025 Intake Onwards**

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Major Requirements			Interdisciplinary Collaborative Core			Broadening & Deepening Electives (BDE)	Total AU
	Core (C)	CNYS-P-Core (CNYS-P-C)	Major Prescribed Electives (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve, Learn (CSL)		
1	11 [2]	27 [3]	0	2	0	0	0	40 [5]
2	18	6	0	8	0	3	10	45
3	25	0	6	0	9	0	6	46
4	15	0	0	0	0	0	13	28
<b>Total</b>	<b>69 [2]</b>	<b>33 [3]</b>	<b>6</b>	<b>10</b>	<b>9</b>	<b>3</b>	<b>29</b>	<b>159 [5]</b>

[ ] AU of courses that could be used to fulfil Core requirement and second major requirement concurrently.

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY1001	Cell	CNYS-P-C	3	
CY1101	Molecule	CNYS-P-C	4	
CY1308	Physics	CNYS-P-C	3	
CY1500	Introduction to Research	CNYS-P-C	2	
CY1601	Mathematics I	CNYS-P-C	4	
EG1001^	Engineers in Society	C	2	Double-counted as Practice Core
CC0015	Health & Wellbeing	CC	2	
			<b>20</b>	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY1007^	Climate Change	CNYS-P-C	3	Double-counted as Planet Core
CY1602	Mathematics II	CNYS-P-C	4	
MA1001	Dynamics	C	3	CY1308 + CY1601
MA1008	Introduction to Computational Thinking	C	3	
MA2001	Mechanics of Materials	C	3	
			<b>16</b>	

YEAR 1 SPECIAL TERM				
Course Code	Course Title	Type	AU	Remarks
CY2003	Research Attachment 3 (Making and Tinkering)	CNYS-P-C	4	
	Overseas Learning Trip			
			<b>4</b>	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY0001	Writing Across The Disciplines	CNYS-P-C	3	
MA5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
MA2002	Theory of Mechanism	C	3	
MA2003	Intro to Thermo-fluids	C	3	
MA2024	Engineering Materials & Manufacturing Processes	C	3	
MA2006	Engineering Mathematics	C	3	CY1602 - waiver of pre-requisite
SP0061	Science & Technology for Humanity	CC	3	
	Second Major Compulsory Course 3	BDE	3	Please see attached list of core.
	Tech-For-Good (T4G)	CSL	3	
			<b>24</b>	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY0002	Ethics	CNYS-P-C	3	
MA5915	Undergraduate Research	BDE	4	2-semester long, course registered only in Sem 2
MA2005	Engineering Graphics	C	3	
MA2071	Laboratory Experiments	C	1	
MA2079	Engineering Innovation and Design	C	2	Semester 2 with 1 week in Special
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	AY27 cohort to read in Year 1 Semester 2
	Second Major Compulsory Course 4	BDE	3	Please see attached list of core.
			<b>21</b>	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
MA2007	Thermodynamics	C	3	MA2003

MA2009	Introduction to Electrical & Electronic Devices	C	3	
MA3001	Machine Element Design	C	3	Having read MA2001, MA2002 and
MA3002	Solid Mechanics and Vibration	C	3	MA2001
MA3004	Mathematical Methods in Engineering	C	3	CY1602 - waiver of pre-requisite
MA3071	Engineering Experiments (ME)	C	1	
MLXXX	Profession Preparation	PS	1	
	Second Major Compulsory Course 5	BDE	3	Please see attached list of core
			20	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
MA3003	Heat Transfer	C	3	MA2007
MA3005	Control Theory	C	3	Having read MA2006
MA3006	Fluid Mechanics	C	3	
MA0218	Introduction to Data Science and Artificial Intelligence	PS	3	
MA48XX	Major-PE 1	MPE	3	
MA48XX	Major-PE 2	MPE	3	
	Second Major Elective 1	BDE	3	Please see attached list of electives
			21	

YEAR 3 SPECIAL TERM				
Course Code	Course Title	Type	AU	Remarks
MA3910	Professional Attachment	PS	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
MA4001	Engineering Design	C	4	Having read MA3001
MA4002	Fluid Dynamics	C	3	MA3006
	Second Major Elective 2	BDE	3	Please see attached list of electives to choose from
	Second Major Elective 3	BDE	3	
	Second Major Elective 4	BDE	4	
	Second Major Interdisciplinary Project	BDE	3	
			20	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
MA4211	CNYSF Overseas Final Year Project	C	8	Year 4 standing
			8	
Total AUs for Graduation:			159	

<sup>^</sup> These courses are double-counted towards both ME Mainstream as well as the Second Major in Sustainability.

Compulsory Courses and Electives for Second Major in Sustainability	
<a href="https://www.ntu.edu.sg/ase/admissions/undergraduate-programmes/second-major-in-sustainability#Content_C002_Col00">https://www.ntu.edu.sg/ase/admissions/undergraduate-programmes/second-major-in-sustainability#Content_C002_Col00</a>	