

**CURRICULUM FOR BACHELOR OF ENGINEERING (AEROSPACE ENGINEERING)**

CN YANG SCHOLARS PROGRAMME

SECOND MAJOR IN DATA ANALYTICS (ASDA)

(FIRST YEAR ADMISSION)

A2025 Intake Onwards

Year of Study	SUMMARY OF ACADEMIC UNIT REQUIREMENT							
	Major Requirements		Interdisciplinary Collaborative Core			Broadening & Deepening Electives (BDE)	Total AU	
Core (C)	CNYSP-Core (CNYSP-C)	Major Prescribed Electives (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve, Learn (CSL)			
1	12 [3]	23	0	2	0	0	37 [3]	
2	20 [3]	6	0	8	0	3	44 [3]	
3	27	0	0	0	9	0	12	48
4	17	0	0	0	0	0	9	26
<b>Total</b>	<b>76 [6]</b>	<b>29</b>	<b>0</b>	<b>10</b>	<b>9</b>	<b>3</b>	<b>28</b>	<b>155 [6]</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	CNYSP-C	3	
CY1101	Molecule	CNYSP-C	4	
CY1308	Physics	CNYSP-C	3	
CY1500	Introduction to Research	CNYSP-C	2	
CY1601	Mathematics I	CNYSP-C	4	
EG1001	Engineers in Society	C	2	
CC0015	Health & Wellbeing	CC	2	
			20	

**YEAR 1 SEMESTER 2**

Course Code	Course Title	Type	AU	Remarks
CY1007	Climate Change	CNYSP-C	3	
MA1001	Dynamics	C	3	<b>CY1308 + CY1601</b>
MA1008^	Introduction to Computational Thinking	C	3	
MA1700	Aerospace Discovery Course	C	1	
MA2001	Mechanics of Materials	C	3	
			13	

**YEAR 1 SPECIAL TERM**

Course Code	Course Title	Type	AU	Remarks
CY2003	Research Attachment 3 (Making and Tinkering)	CNYSP-C	4	
	Overseas Learning Trip			
			4	

**YEAR 2 SEMESTER 1**

Course Code	Course Title	Type	AU	Remarks
CY0001	Writing Across The Disciplines	CNYSP-C	3	
MA5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
MA2003	Intro to Thermo-fluids	C	3	
MA2006^	Engineering Mathematics	C	3	<b>CY1602 - waiver of pre-requisite required</b>
MA2072	Laboratory Experiments (AE)	C	1	
MA2701	Flight Performance	C	2	
SP0061	Science & Technology for Humanity	CC	3	
MH1403	Tech-For-Good (T4G)	CSL	3	
			18	

**YEAR 2 SEMESTER 2**

Course Code	Course Title	Type	AU	Remarks
CY0002	Ethics	CNYSP-C	3	
MA5915	Undergraduate Research	BDE	4	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
MA2007	Thermodynamics	C	3	<b>MA2003</b>
MA2700	Aerospace Materials & Manufacturing Process	C	3	
MA2079	Engineering Innovation and Design	C	2	<b>Semester 2 with 1 week in Special Term</b>
MA3705	Aerospace Control Theory	C	3	<b>Having Read MA2006</b>
CC0006	Sustainability: Society, Economy & Environment	CC	3	
MH1403	Algorithms and Computing	BDE	3	<b>MA1008</b>
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	<b>AY27 cohort to read in Year 1 Semester 2</b>
			26	

**YEAR 3 SEMESTER 1**

Course Code	Course Title	Type	AU	Remarks
MA3072	Engineering Experiments (AE)	C	1	
MA3700	Aircraft Structures I	C	3	<b>MA2001</b>
MA3701	Aerodynamics	C	3	<b>MA2003</b>
MA3702	Aircraft Propulsion	C	3	<b>MA2007</b>
MA3703	Flight Dynamics	C	2	<b>MA2701 &amp; MA3705</b>
MA3704	Aircraft Electrical Devices	C	3	
MA4705	Aircraft Navigation and Flight Computers	C	3	<b>CY1602 - waiver of pre-requisite required</b>

MA4849	Operations Research	BDE	3	
MLXXXX	Profession Preparation	PS	1	
			22	

#### YEAR 3 SEMESTER 2

Course Code	Course Title	Type	AU	Remarks
MA2005	Engineering Graphics	C	3	
MA3003	Heat Transfer	C	3	MA2007
MA3006	Fluid Mechanics	C	3	MA2003
MA0218	Introduction to Data Science and Artificial Intelligence	PS	3	MA1008
SC2207	Introduction to Database	BDE	3	
	Second major elective 1	BDE	3	
	Second major elective 2	BDE	3	
			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
MA4701	Aircraft Design	C	3	MA3701, MA3702 & MA3703
MA4702	Aircraft Structures II	C	3	MA2001 & MA3700
MA4704	Aeroelasticity	C	3	MA3700 & MA3701
	Second major elective 3	BDE	3	
SC4020	Data Analytics and Mining	BDE	3	MH1403
SC4024	Data Visualization	BDE	3	MA1008, MA4849
			18	

#### YEAR 4 SEMESTER 2

Course Code	Course Title	Type	AU	Remarks
MA4211	CNYSP Overseas Final Year Project	C	8	Year 4 Standing
			8	

Total AUs for Graduation: 155

*<sup>^</sup> These courses are double-counted towards both AERO 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
MPE	MA4849	Operations Research	3	1	-
Core	MA2006	Engineering Mathematics	3	1 & 2	CY1602
Core	MA1008	Introduction to Computational Thinking	3	2	-
BDE	MH1403	Algorithms and Computing	3	2	MA1008
BDE	SC2207	Introduction to Database	3	1 & 2	MH1403
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	MA1008 & MA4849

#### Suggested Electives for Second Major in Data Analytics

Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	MA4829	Machine Intelligence	3	2	-
BDE	MA4830	Real Time Software for Mechatronics System	3	1	-
BDE	MA4832	Microprocessor System	3	1	-