

CURRICULUM FOR BACHELOR OF ENGINEERING (AEROSPACE ENGINEERING)
CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN DATA ANALYTICS (ASDA)
(FIRST YEAR ADMISSION)
A2025 Intake Onwards

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Major Requirements			Interdisciplinary Collaborative Core			Broadening & Deepening Electives (BDE)	Total AU
	Core (C)	CNYS-SP-Core (CNYS-SP-C)	Major Prescribed Electives (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve, Learn (CSL)		
1	12 [3]	23	0	2	0	0	0	37 [3]
2	20 [3]	6	0	8	0	3	7	44 [3]
3	27	0	0	0	9	0	12	48
4	17	0	0	0	0	0	9	26
Total	76 [6]	29	0	10	9	3	28	155 [6]

[] 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-SP-C	3	
CY1101	Molecule	CNYS-SP-C	4	
CY1308	Physics	CNYS-SP-C	3	
CY1500	Introduction to Research	CNYS-SP-C	2	
CY1601	Mathematics I	CNYS-SP-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	CNYS-SP-C	3	
MA1001	Dynamics	C	3	CY1308 + CY1601
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)	CNYS-SP-C	4	
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY0001	Writing Across The Disciplines	CNYS-SP-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	CY1602 - waiver of pre-requisite required
MA2072	Laboratory Experiments (AE)	C	1	
MA2701	Flight Performance	C	2	
SP0061	Science & Technology for Humanity	CC	3	
	Tech-For-Good (T4G)	CSL	3	
			18	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY0002	Ethics	CNYS-SP-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	MA2003
MA2700	Aerospace Materials & Manufacturing Process	C	3	
MA2079	Engineering Innovation and Design	C	2	Semester 2 with 1 week in Special Term
MA3705	Aerospace Control Theory	C	3	Having Read MA2006
CC0006	Sustainability: Society, Economy & Environment	CC	3	
MH1403	Algorithms and Computing	BDE	3	MA1008
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	AY27 cohort to read in Year 1 Semester 2
			26	

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

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	CNYSF Overseas Final Year Project	C	8	Year 4 Standing
			8	
Total AUs for Graduation:			155	

^ 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	-