

**AY2023-24 CURRICULUM FOR BACHELOR OF ENGINEERING (AEROSPACE ENGINEERING)
SECOND MAJOR IN DATA ANALYTICS (ASDA)
(FIRST YEAR ADMISSION)**

Last Updated : 19-Apr-23

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSP Core	MPE	CC	FC	BDE	Total AU
1	12	23	0	5	0	3	43
2	17	10	0	8	0	3	38
3	30	0	0	0	8	9	47
4	17	0	0	0	0	9	26
Total	76	33	0	13	8	24	154

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	
EG1001	Engineers in Society	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			21	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Courses
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	
MH1403	Algorithms and Computing	BDE	3	
CC0002	Navigating the Digital World	CC	2	
			18	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course
MA2003	Intro to Thermo-fluids	C	3	
MA2006^	Engineering Mathematics	C	3	CY1602
MA2072	Laboratory Experiments (AE)	C	1	
MA2701	Flight Performance	C	2	MA1001 & MA1700
SP0061	Science & Technology for Humanity	CC	3	
SC2207	Introduction to Database	BDE	3	MH1403
			18	

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)
MA2007	Thermodynamics	C	3	MA2003
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	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			20	

YEAR 3 SEMESTER 1				
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Course Code	Course Title	Type	AU	Pre-Requisite/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
MA4849	Operations Research	BDE	3	
			21	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA2005	Engineering Graphics	C	3	
MA2700	Aerospace Materials & Manufacturing Process	C	3	
MA3003	Heat Transfer	C	3	MA2007
MA3006	Fluid Mechanics	C	3	MA2003
MA0218	Introduction to Data Science and Artificial Intelligence	FC	3	MA1008
XXXXXX	DA Elective 1	BDE	3	
XXXXXX	DA Elective 2	BDE	3	
			21	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA3075	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MA4701	Aircraft Design	C	3	MA3701, MA3702 & MA3703
MA4702	Aircraft Structures II	C	3	MA2001 & MA3700
MA4704	Aeroelasticity	C	3	MA3700 & MA3701
XXXXXX	DA 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	Pre-Requisite/Remarks
MA4211	CNYSF Overseas Final Year Project	C	8	CNYSF Course
			8	

Total AU for Graduation: **154**

^ 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
BDE	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
BDE	MA4829	Machine Intelligence	3	2	-
BDE	MA4830	Real Time Software for Mechatronics System	3	1	-
BDE	MA4832	Microprocessor System	3	1	-

List of Eligible Electives can be found at the following link: <https://www.ntu.edu.sg/engineering/admissions/ug/allprogrammes/highlights/da>