

**AY2022-2023 Curriculum for
Data Science & Artificial Intelligence with USP**

Year of Study	DSAI Major Requirement		NTU-USP Requirement		NTU-ICC Requirement		Broadening and Deepening Elective	Total AU
	Core	MPE	NTU-USP Core	NTU-USP PE	Common Core	Foundational Core		
1	16	0	12	0	2	3	0	33
2	26	0	0	6	5	0	0	37
3	10	0	0	6	0	10	0	26
4	8	18	0	0	0	0	9	35
Total	60	18	12	12	7	13	9	131

Suggested Study Plan

Year 1 Semester 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC1003	Introduction to Computational Thinking & Programming	C	3	Nil
MH1805	Calculus	C	4	Nil
MH1812	Discrete Mathematics	C	3	Nil
CC0002	Navigating the Digital World	C-Core	2	Nil
SP0001	Writing and Reasoning	NTU-USP Core	3	Nil
SP0008	Living Well	NTU-USP Core	3	Nil
			18	

Year 1 Semester 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SC1007	Data Structures & Algorithms	C	3	SC1003
SC2002	Object Oriented Design and Programming	C	3	SC1003
SC1015	Introduction to Data Science & AI	F-Core	3	SC1003
SP0002	Ethics	NTU-USP Core	3	Nil
SP0007	Fieldwork and Documentation	NTU-USP Core	3	Nil
			15	

Year 2 Semester 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC2001	Algorithm Design and Analysis	C	3	SC1007, MH1812
SC2006	Software Engineering	C	3	SC2002 (Corequisite)
MH2500	Probability and Introduction to Statistics	C	4	MH1805
MH2802	Linear Algebra for Scientists	C	3	Nil
ML0004	Career and Entrepreneurial Development for the Future World	C-Core	2	Nil
	USP Prescribed Elective 1 – AHC/STS	NTU-USP PE	3	TBC
			18	

Year 2 Semester 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SC2207	Introduction to Database Systems	C	3	SC2001 (Corequisite)
SC3000	Artificial Intelligence	C	3	SC1007, SC1015, MH2500
MH3500	Statistics	C	4	MH2500
MH3511	Data Analysis with Computer	C	3	MH2500
CC0007	Science & Technology for Humanity	C-Core	3	Nil
	USP Prescribed Elective 2 – AHC/STS	NTU-USP PE	3	TBC
			19	

Year 3 Semester 1				
Course Code	Course Title	Type	AU	Pre-Requisite
MH2100	Calculus III	C	4	MH1805
SC4000	Machine Learning	C	3	SC1007, MH2500
SC4020	Data Analytics and Mining	C	3	SC2001
	USP Prescribed Elective 3 – AHC/STS	NTU-USP PE	3	TBC
	USP Prescribed Elective 4 – AHC/STS	NTU-USP PE	3	TBC
			16	

Year 3 Semester 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SD3079	Professional Internship	F-Core	10	Year 3 standing
			10	

Year 4 Semester 1				
Course Code	Course Title	Type	AU	Pre-Requisite
SC4079	Final Year Project	C	4	Year 4 standing
MH/SC4xxx	Major Prescribed Electives	MPE	9	Year 3 standing
	Broadening and Deepening Electives	BDE	3	
			16	

Year 4 Semester 2				
Course Code	Course Title	Type	AU	Pre-Requisite
SC4079	Final Year Project	C	4	Year 4 standing
MH/SC4xxx	Major Prescribed Electives	MPE	9	Year 3 standing
	Broadening and Deepening Electives	BDE	6	
			19	