

**AY2023-2024 AND LATER COHORTS 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 |
|-------------|-------------------------|--------|-----------|-----------------|
| SD3920 | 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 | |