

AY2022-23 AND LATER COHORTS CURRICULUM FOR COMPUTER ENGINEERING

With a Second Major in Data Analytics

SUMMARY OF ACADEMIC UNIT REQUIREMENT

Year of Study	Major		Second Major Compulsory	ICC		BDE	Total AU
	Core	MPE		Common - Core	Foundational - Core		
1	25	0	0	9	3	0	37
2	27	0	3	8	0	0	38
3	10	0	6	0	12	0	28
4	8	12	9	0	0	3	32
Total	70	12	18	17	15	3	135

YEAR 1 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1003	Introduction to Computational Thinking & Programming	Core/2M-C	3	Nil
SC1005	Digital Logic	Core	3	Nil
SC1013	Physics For Computing	Core	2	Nil
MH1810	Mathematics I	Core	3	Nil
EG1001	Engineers in Society	Core	2	Nil
CC0003	Ethics & Civics in a Multicultural World	C-Core	2	Nil
CC0005	Healthy Living & Wellbeing	C-Core	3	Nil
HW0001	Introduction to Academic Communication	-	-	For student who failed QET
			18	

YEAR 1 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC1004	Linear Algebra for Computing	Core/2M-C	3	SC1003 (co-requisite) & MH1810
SC1006	Computer Organisation & Architecture	Core	3	SC1005 (co-requisite)
SC1007	Data Structures & Algorithms	Core/2M-C	3	SC1003
MH1812	Discrete Mathematics	Core	3	Nil
SC1015	Introduction to Data Science & Artificial Intelligence	F-Core	3	SC1003
CC0001	Inquiry & Communication in an Interdisciplinary World	C-Core	2	Nil
CC0002	Navigating the Digital World	C-Core	2	Nil
			19	

Year 1 Total AU 37

YEAR 2 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC2000	Probability & Statistics for Computing	Core/2M-C	3	MH1810
SC2001	Algorithm Design & Analysis	Core	3	SC1007 & MH1812
SC2002	Object Oriented Design & Programming	Core	3	SC1003 OR SC1007
SC2104	Sensors, Interfacing & Digital Control	Core	3	SC1006
SC2107	Microprocessor System Design and Development	Core	3	SC1006
CC0007	Science & Technology for Humanity	C-Core	3	Nil
			18	

YEAR 2 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC2103	Digital Systems Design	Core	3	SC1005
SC2005	Operating Systems	Core	3	SC1006 & SC1007
SC2006	Software Engineering	Core	3	SC2002 (co-requisite)
SC2008	Computer Network	Core	3	SC2000 & SC1004
SC2207	Introduction to Databases	Core/2M-C	3	SC2001 (co-requisite)
CC0006	Sustainability: Society, Economy & Environment	C-Core	3	Nil
ML0004	Career & Innovative Enterprise for the Future World	C-Core	2	Nil
			20	

Year 2 Total AU 38

YEAR 3 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC3102	Signals, Systems and Transforms	Core	3	SC1004
SC3103	Embedded Programming	Core	3	SC2107
SC2079	Multidisciplinary Design Project	Core	4	Year 3 Standing
HW0288	Engineering Communication	F-Core	2	CC0001 & Year 3 standing
	2nd Major Elective	2M-E	3	Refer to syllabus
	2nd Major Elective	2M-E	3	Refer to syllabus
			18	

YEAR 3 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC3079	Professional Internship	F-Core	10	Year 3 Standing
			10	

Year 3 Total AU 28

YEAR 4 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 1)	Core	4	Year 4 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
SC4020	Data Analytics and Mining	Core/2M-C	3	Year 3 standing
SC4024/SC402	Data Visualisation/Big Data Management	2M-C	3	SC1003 and SC2000/SC3020
			16	

YEAR 4 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 2)	Core	4	Year 4 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	MPE	3	Year 3 Standing
	2nd Major Elective	2M-E	3	Refer to syllabus
	Broadening and Deepening Elective	BDE	3	Refer to Class Schedule
			16	

Year 4 Total AU 32

MPE Structure of Computer Engineering (U21 and after)

Course Code	Type	AU	Remarks
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
SC3xxx/SC4xxx	MPE	3	Choose within SC3xxx & SC4xxx
	Total	12	

Please refer the CE MPE Courses and Elective Focus Areas on SCSE website.

Data Analytics Course Listing

Course Code	Course Title	Type	AU	Pre-requisite
SC1003	Introduction to Computational Thinking & Programming	Core/2M-C	3	Nil
SC1004	Linear Algebra for Computing	Core/2M-C	3	SC1003 (co-requisite) & MH1810
SC1007	Data Structures & Algorithms	Core/2M-C	3	SC1003
SC2000	Probability & Statistics for Computing	Core/2M-C	3	MH1810
SC2207	Introduction to Databases	Core/2M-C	3	SC2001 (co-requisite)
SC4020	Data Analytics and Mining	Core/2M-C	3	Year 3 standing
SC4024/SC4023	Data Visualisation/Big Data Management	2M-C	3	SC1003 and SC2000/SC3020
	2nd Major Elective	2M-E	3	Refer to syllabus

Please Refer to the Second Major in Data Analytics website for Data Analytics Course Listing:

<https://www.ntu.edu.sg/engineering/admissions/ug/allprogrammes/highlights/da>