

# AY2024-25 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	21	0	0	9	3	0	35
2	30	0	3	8	0	0	41
3	3	6	6	0	12	0	31
4	12	9	9	0	0	3	29
Total	66	15	18	17	15	3	134

### YEAR 1 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1003	Introduction to Computational Thinking & Programming	Core/2M-C	3	Nil
SC1013	Physics For Computing	Core	2	Nil
SC1004	Linear Algebra for Computing	Core	4	SC1003 (co-requisite)
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
HW0002	Calculus	-	-	For student not done Calculus
	Broadening and Deepening Elective	BDE	3	Refer to Class Schedule
			19	

### YEAR 1 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC1005	Digital Logic	Core	3	Nil
SC1007	Data Structures & Algorithms	Core	3	SC1003
SC1008	C and C++ Programming	Core	3	SC1003
MH1812	Discrete Mathematics	Core	3	Nil
CC0001	Inquiry & Communication in an Interdisciplinary World	C-Core	2	Nil
CC0002	Navigating the Digital World	C-Core	2	Nil
			16	

**Year 1 Total AU 35**

### YEAR 2 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-requisite
SC1006	Computer Organisation & Architecture	Core	3	SC1005 (co-requisite)
SC2000	Probability & Statistics for Computing	Core	3	Nil
SC2001	Algorithm Design & Analysis	Core	3	SC1007 & MH1812
SC2002	Object Oriented Design & Programming	Core	3	SC1003 OR SC1007
SC2103	Digital Systems Design	Core	3	SC1005
CC0007	Science & Technology for Humanity	C-Core	3	Nil
SC2207	Introduction to Databases	Core/2M-C	3	SC2001 (co-requisite)
			21	

### YEAR 2 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-requisite
SC2005	Operating Systems	Core	3	SC1006 & SC1007
SC2006	Software Engineering	Core	3	SC2002 (co-requisite)
SC2008	Computer Network	Core	3	SC2000 & SC1004
SC2104	Sensors, Interfacing & Digital Control	Core	3	SC1006
CC0006	Sustainability: Society, Economy & Environment	C-Core	3	Nil
ML0004	Career & Innovative Enterprise for the Future World	C-Core	2	Nil
SC3102	Signals, Systems and Transforms	Core	3	SC1004
			20	

**Year 2 Total AU 41**

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC2107	Microprocessor System Design and Development	Core	3	SC1006
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
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE	3	Year 3 Standing
			21	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-requisite
SC3920	Professional Internship (Graded)	F-Core	10	Year 3 Standing
			10	

**Year 3 Total AU                    31**

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-requisite
SC4079	Final Year Project (Part 1)	Core	4	Year 4 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
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE	3	Year 3 Standing
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	MPE	3	Year 3 Standing
SC3103	Embedded Programming	Core	3	SC2107
			19	

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
	2nd Major Elective	2M-E	3	Refer to syllabus
			10	

**Year 4 Total AU                    29**

MPE Structure of Computer Engineering (U24 and after)				
Course Code	Type	AU	Remarks	
SC3xxx/SC4xxx	MPE-1	3	Any MPE	
SC4xxx	MPE-2	3	Choose within SC4xxx	
SC4xxx	MPE-3	3	Choose within SC4xxx	
SC4xxx	MPE-4	3	Choose within SC4xxx	
SC4xxx	MPE-5	3	Choose within SC4xxx	
	<b>Total</b>	<b>15</b>		

Please refer the CE MPE Courses and Elective Focus Areas on CCDS 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 webiste for Data Analytics Course Listing:

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