

## SCSE Course Listing

Course Code	Subject	AU	Pre-requisite	Availability for AY23-24	
				1 <sup>st</sup> Semester	2 <sup>nd</sup> Semester
SC1003	Introduction to Computational Thinking & Programming	3	Nil	Offering	Offering
SC1004	Linear Algebra for Computing	3	SC1003 (co-requisite) & MH1810	Offering	Offering
SC1005	Digital Logic	3	Nil	Offering	Offering
SC1006	Computer Organisation & Architecture	3	SC1005 (co-requisite)	Offering	Offering
SC1007	Data Structures & Algorithms	3	SC1003	Offering	Offering
SC1013	Physics For Computing	2	Nil	Offering	NA
SC1015	Introduction to Data Science & Artificial Intelligence	3	SC1003	TBA	Offering
SC2000	Probability & Statistics for Computing	3	MH1810	Offering	Offering
SC2001	Algorithm Design & Analysis	3	SC1007 & MH1812	Offering	Offering
SC2002	Object Oriented Design & Programming	3	SC1003 OR SC1007	Offering	Offering
SC2005	Operating Systems	3	SC1006 & SC1007	Offering	Offering
SC2006	Software Engineering	3	SC2002 (co-requisite)	Offering	Offering
SC2103	Digital Systems Design	3	SC1005	Offering	Offering
SC2104	Sensors, Interfacing & Digital Control	3	SC1006	Offering	Offering
SC2107	Microprocessor System Design and Development	3	SC1006	Offering	Offering
SC2207	Introduction to Databases	3	SC2001 (co-requisite)	Offering	Offering
SC2008	Computer Network	3	SC2000 & SC1004	Offering	Offering
SC3000	Artificial Intelligence	3	SC1007 & SC1015 & SC2000	Offering	Offering
SC3040	Advanced Software Engineering	3	SC2006	Offering	Offering
SC3050	Advanced Computer Architecture	3	SC1006	Offering	Offering
SC3060	Computer Graphics and Visualization	3	Year 3 Standing	Offering	NA
SC3061	Human-Computer Interaction	3	Year 3 Standing	Offering	NA
SC3102	Signals, Systems and Transforms	3	SC1004	Offering	Offering
SC3103	Embedded Programming	3	SC2107	Offering	Offering
SC3010	Computing Security	3	SC2005	Offering	Offering
SC3020	Database System Principles	3	SC2207	Offering	Offering
SC3030	Advanced Computer Networks	3	SC2008	Offering	NA
SC4000	Machine Learning	3	SC1004 & SC2000 & SC1007	Offering	Offering
SC4001	Neural Networks and Deep Learning	3	SC1004 & SC1007, OR SC1007 & MH2802	Offering	Offering
SC4002	Natural Language Processing	3	SC2001 & MH1403	Offering	NA
SC4003	Intelligent Agents	3	SC1007 & SC2000, OR SC1007 & MH2500	NA	Offering
SC4010	Applied Cryptography	3	SC2000 OR MH2500	Offering	NA
SC4011	Security Management	3	SC2006	Offering	NA
SC4012	Software Security	3	SC2005 & SC2002	NA	Offering
SC4014	Concepts and Techniques for Malware Analysis	3	SC2005 & SC1006	NA	Offering
SC4015	Cyber Physical System Security	3	SC1006	NA	Offering
SC4016	Cyber Threat Intelligence	3	Year 3 Standing	Offering	NA
SC4020	Data Analytics and Mining	3	SC2001 OR MH1403	Offering	NA
SC4021	Information Retrieval	3	SC2001 OR MH1403	NA	Offering
SC4022	Network Science	3	SC2001 OR MH1403	NA	Offering

SC4023	Big Data Management	3	SC2207	NA	Offering
SC4024	Data Visualisation	3	SC1003 & MH2500, OR SC2000 & SC1003	Offering	NA
SC4025	Developing Data Products	3	SC1015 & MH2500	Offering	NA
SC4030	Wireless and Mobile Networks	3	SC2008	Offering	NA
SC4031	Internet of Things: Communications and Networking	3	SC2008	NA	Offering
SC4040	Advanced Topics in Algorithms	3	SC2001	Offering	NA
SC4051	Distributed Systems	3	SC2008 & SC2005	NA	Offering
SC4052	Cloud Computing	3	SC1004	NA	Offering
SC4053	Blockchain Technology	3	MH1812 & SC2001 & SC1007	Offering	NA
SC4054	Simulation and Modelling	3	SC2000 & SC1007	NA	Offering
SC4060	Virtual and Augmented Reality	3	Year 3 Standing	NA	Offering
SC4061	Computer Vision	3	Year 3 Standing	Offering	NA
SC4242	Compiler Techniques	3	SC2006 & SC2001	Offering	TBA
SC4172	Internet of Things: Tiny Machine Learning	3	SC2107	NA	Offering
SC2079	Multidisciplinary Design Project	4	Year 3 Standing	Offering	Offering
SC3079	Professional Internship	10	Year 3 Standing	Offering	Offering
SD3079	Professional Internship	10	Year 3 Standing	Offering	Offering
SC3026	Professional Attachment	5	Year 3 Standing	Offering	Offering
SC4079	Final Year Project (Part 1)	4	Year 4 Standing	Offering	Offering
SC4079	Final Year Project (Part 2)	4	Year 4 Standing	Offering	Offering
SC3xxx/SC4xxx	Major Prescribe Elective (Choose within SC3xxx/SC4xxx)	3	Year 3 Standing	-	-
SC3xxx	Major Prescribe Elective (Choose within SC3xxx)	3	Year 3 Standing	-	-
SC4xxx	Major Prescribe Elective (Choose within SC4xxx)	3	Year 3 Standing	-	-
-	Broadening and Deepening Elective	3	Refer to Class Schedule	-	-
-	Broadening and Deepening Elective	2	Refer to Class Schedule	-	-
<b>Courses Offered by Other School</b>					
EG1001	Engineers in Society	2	Nil	Offering	Offering
CC0001	Inquiry & Communication in an Interdisciplinary World	2	Nil	Offering	Offering
CC0002	Navigating the Digital World	2	Nil	Offering	Offering
CC0003	Ethics & Civics in a Multicultural World	2	Nil	Offering	Offering
CC0005	Healthy Living & Wellbeing	3	Nil	Offering	Offering
CC0006	Sustainability: Society, Economy & Environment	3	Nil	Offering	Offering
CC0007	Science & Technology for Humanity	3	Nil	Offering	Offering
ML0004	Career & Innovative Enterprise for the Future World	2	Nil	Offering	Offering
HW0001	Introduction to Academic Communication	-	For student who failed QET	-	-
HW0288	Engineering Communication	2	CC0001 & Year 3 standing	Offering	Offering
HW0218	Communication Across the Sciences	2	CC0001	Offering	Offering
MH1810	Mathematics I	3	Nil	Offering	Offering
MH1812	Discrete Mathematics	3	Nil	Offering	Offering

### Important Notes:

1. This list is subjected to changes every semester.
2. Topics to be offered can vary depending on factors such as availability of faculty; availability of visiting staff with certain expertise; new technological trends, etc.
3. To get the most updated list of courses available in Sem 1 or Sem 2, students may check the course code via this link:

[https://wis.ntu.edu.sg/webexe/owa/aus\\_schedule.main](https://wis.ntu.edu.sg/webexe/owa/aus_schedule.main)

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