

**Bachelor of Science (Data Science and AI) Curriculum**  
**Final Year Cores and Major Prescribed Electives**  
**(For AY2021 and later Cohorts)**

DSAI Core	Semester Offered		AU	Pre-requisite*
	S1	S2		
SC4020 Data Analytics and Mining	√		3	SC2001
SC4000 Machine Learning	√	√	3	SC1004, SC1007, SC2000
DSAI MPEs	Semester Offered		AU	Pre-requisite*
	S1	S2		
SC3020 Database System Principles	√	√	3	SC2207
SC4001 Neural Networks & Deep Learning	√	√	3	SC1007 & MH2802 or SC1004 & SC1007
SC4010 Applied Cryptography	√		3	SC2000 or MH2500
SC4021 Information Retrieval		√	3	SC2001 or MH1403
SC4002 Natural Language Processing	√		3	SC2001 or MH1403
SC4003 Intelligent Agents		√	3	SC1007 & MH2500 or SC1007 & SC2000
SC4023 Big Data Management		√	3	SC2207
SC4024 Data Visualization	√		3	SC1003 & MH2500 or SC1003 & SC2000
SC4025 Developing Data Products	√		3	SC1015 & MH2500
SC4022 Network Science		√	3	SC2001 or MH1403
SC4052 Cloud Computing		√	3	SC1004 or MH2802
MH3510 Regression Analysis	√		4	MH2500 & MH3500
MH3701 Basic Optimization		√	4	MH1201 or MH2800 or MH2802
MH4500 Time Series Analysis		√	4	MH2500 & MH3500 & MH3510
MH4501 Multivariate Analysis		√	4	MH2500 & MH3500 & MH3510
MH4511 Sampling & Survey	√		4	MH2500 & MH3500
MH4513 Survival Analysis	√		4	MH2500 & MH3500 & MH3510
MH4515 Applied Bayesian Statistics		TBC	4	TBC
MH4516 Applied Categorical Data Analysis		TBC	4	TBC
MH4517 Data Applications in Natural Sciences		√	4	MH1402 or MH1403 or SC2001
MH4518 Simulation Techniques in Finance	√		4	MH2500 & MH3511
CS4022 Social Media Mining	√		4	SC4020
CS4031 Media Planning and Strategies		TBC	4	Nil

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SCSE MPEs Can be taken as BDE if meet pre-requisite	Semester Offered		AU	Pre-requisite*
	S1	S2		
SC3010 Computer Security	√	√	3	SC2005
SC4011 Security Management	√		3	SC2006
SC4012 Software Security		√	3	SC2002 & SC2005
SC4014 Concepts and Techniques for Malware Analysis		√	3	SC1006 & SC2005 & SC3010 (co-requisite)
SC4015 Cyber Physical System Security		√	3	SC1006
SC4016 Cyber Threat Intelligence	√		3	Nil
SC4040 Advanced Topics in Algorithms	√		3	SC2001
SC4053 Blockchain Technology	√		3	SC1007, SC2001, MH1812
SC4054 Simulation and Modelling		√	3	SC1007 & SC2000
SC4060 Virtual and Augmented Reality		√	3	Nil
SC4061 Computer Vision	√		3	Nil

\*In addition to the Pre-requisite shown here, student also needs to be of at least Study Year 3 standing.

**Note:**

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. Note that this list is subjected to changes.

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)