DSAI Core and MPE list for AY2021 and later Cohorts

Course Code	Course Title	Type	AU	Offering		Pre-requisite
				S1	S2	
MH1805	Calculus	Core	4	By SPMS		Nil
MH1812	Discrete Mathematics	Core	3	By SPMS		Nil
MH2802	Linear Algebra for Scientists	Core	3	By SPMS		Nil
MH2100	Calculus III	Core	4	By SPMS		MH1805
MH2500	Probability and Introduction to Statistics	Core	4	By SPMS		MH1805
MH3500	Statistics	Core	4	By SPMS		MH2500
MH3511	Data Analysis with Computer	Core	3	By SPMS		MH2500
SC1007	Data Structures & Algorithm	Core	3	√	√	SC1003
SC2001	Algorithm Design and Analysis	Core	3	√	√	SC1007 & MH1812
SC2002	Object Oriented Design and Programming	Core	3	√	√	SC1003
SC2006	Software Engineering	Core	3	√	√	SC2002 (co-requisite)
SC2207	Introduction to Database Systems	Core	3	√	√	SC2001 (co-requisite)
SC3000	Artificial Intelligence	Core	3	√	√	SC1007 & MH2500
SC3021	Data Science Fundamentals (Only for U24 and after)	Core	3		√	SC1003
SC4000	Machine Learning	Core	3	√	√	SC1004 & SC1007 & SC2000
SC4020	Data Analytics and Mining	Core	3	√		SC2001
Major Prescribed Elective (MPE) list and requirement:						
U23 to U21 : Minimum 18 AU of MPE with any MPE combination from Level 3 or Level 4 courses						
U24 and after: Minimum 18 AU of MPE with at least Four MPE are Level 4 courses						
SC3010	Computer Security	MPE	3	√	√	SC2005
SC3020	Database System Principles	MPE	3	√		SC2207
SC3030	Advanced Computer Networks	MPE	3	√		SC2008
SC3040	Advanced Software Engineering	MPE	3	√		SC2006
SC3050	Advanced Computer Architecture	MPE	3	√		SC1005
SC3270	Reasoning About Programs	MPE	3	√		SC2001or SC2301 or MH1812 & MH1403
SC4001	Neural Networks & Deep Learning	MPE	3	√	√	SC1007 & MH2802 or SC1004 & SC1007
SC4002	Natural Language Processing	MPE	3	√		SC2001 or MH1403
SC4003	Intelligent Agents	MPE	3		√	SC1007 & MH2500 or SC1007 & SC2000
SC4010	Applied Cryptography	MPE	3	√		SC2000 or MH2500
SC4011	Security Management	MPE	3	TBC		
SC4012	Software Security	MPE	3		√	SC2002 & SC2005
SC4013	Application Security	MPE	3	√		SC2005 & SC2008
SC4014	Concepts and Techniques for Malware Analysis	MPE	3	TBC		
SC4015	Cyber Physical System Security	MPE	3		√	SC1006
SC4016	Cyber Threat Intelligence	MPE	3	√		Year 3 Standing
SC4017	Data Privacy & Security	MPE	3	TBC		
SC4021	Information Retrieval	MPE	3		√	SC2001 or MH1403
SC4022	Network Science	MPE	3			SC2001 or MH1403
SC4023	Big Data Management	MPE	3		√	SC2207
SC4024	Data Visualization	MPE	3	√		SC1003 & MH2500 or SC1003 & SC2000
SC4025	Digital Product Management	MPE	3	√		SC2006
SC4030	Wireless and Mobile Network	MPE	3	√		SC2008
SC4031	Internet of Things: Communications Networking	MPE	3		√	SC2008
SC4040	Advanced Topics in Algorithms	MPE	3	√		SC2001
SC4050	Parallel Computing	MPE	3	√		SC2001
SC4051	Distributed Systems	MPE	3	√		SC2005 & SC2008
SC4052	Cloud Computing	MPE	3		√	SC1004 or MH2802
SC4054	Simulation and Modelling	MPE	3	TBC		

SC4055	Introduction to Quantum Computing	MPE	3	**TBC**		
SC4060	Virtual and Augmented Reality	MPE	3	**TBC**		
SC4061	Computer Vision	MPE	3	√		Year 3 Standing
SC4062	Generative Artificial Intelligence - Advanced Topics	MPE	3		√	SC4001 & SC4002
SC4063	Network Security	MPE	3		√	SC2005 & SC2008
SC4064	GPU Programming	MPE	3		√	SC2001, SC2005
SC4090	Applications of Data Science and AI in Accounting	MPE	3	√		SC1007&SC2000 or SC1007 &MH2500
SC4172	Internet of Things: Tiny Machine Learning	MPE	3		√	SC2107
SC4262	Introduction to Generative AI	MPE	3	**TBC**		
MH3510	Regression Analysis	MPE	4	By SPMS		MH2500 & MH3500
MH3512	Stochastic Processes	MPE	4	By SPMS		MH2500
MH3701	Basic Optimization	MPE	4	By SPMS		MH1201 or MH2800 or MH2802
MH4500	Time Series Analysis	MPE	4	By SPMS		MH2500 & MH3500 & MH3510
MH4501	Multivariate Analysis	MPE	4	By SPMS		MH2500 & MH3500 & MH3510
MH4511	Sampling & Survey	MPE	4	By SPMS		MH2500 & MH3500
MH4513	Survival Analysis	MPE	4	By SPMS		MH2500 & MH3500 & MH3510
MH4517	Data Applications in Natural Sciences	MPE	4	By SPMS		MH1402 or MH1403 or SC2001
MH4518	Simulation Techniques in Finance	MPE	4	By SPMS		MH2500 & MH3511
MH4521	Reinforcement Learning	MPE	4	By SPMS		NIl

Important Note for DSAI MPE:

Minimum 18 AU of MPE is required for graduation. Students are allowed to fulfil MPE requirement by over 1 or 2 AU.

Semester offered is indicative only. Students should refer to the official ***class schedule*** *for the latest course offering information prior to registration.*

*Courses marked as " **TBC** " indicate that the semester of offering (S1/S2) has yet to be confirmed.*

Students are encouraged to plan with flexibility and check for updates during the course registration period.