

Second year			
Code	Course details	Other information	
Course code	Course Name Course structure Instructor name(s)	Mention if Minor Mention if compulsory for other major students	
MAT 203	Introduction to Real Analysis [3003] Dr. Ramiz Reza	[core course for 2nd yr BS-MS and i2M] [Protected minor for 2nd yrs]	
MAT 204	Introduction to Groups and Rings [3003] Dr. Geetha Thangavelu	[core course for 2nd yr BS-MS and i2M] [Protected Minor for 3rd year]	
MAT 205	Introduction to Linear Algebra and Complex Analysis [3003] Dr. Mitra Koley	[core course for 2nd yr BS-MS and i2M] [can be a minor for 3rd year]	
MAT 301/DSC 311	Mathematical Statistics [3003] [Data Sc. Faculty]	[core course for 2nd yr BS-MS, i2M, i2DSC]	
MAT 302/DSC 318	Mathematical Statistics Lab [0021] [Data Sc. Faculty]	[core course for 2nd yr BS-MS, i2M, i2DSC]	
MAT 3512/DSC312*	Optimisation Techniques and Linear Programming (2 credits) [2002] <i>Instructor Not Yet Decided</i>	[Elective for 2nd yr. BS-MS Math and i2 Math, Core for i2DSc.]	
MAT 3901*	Number Theory (2 credits) [2002] Dr. Jyothsnaa Sivaraman	Elective for BS-MS 2nd year and i2M. 2 credit course with per week 3 hours of instruction Course will be completed in 8-9 weeks. First part is same as MAT424	
DSC 316	Machine Learning I [3003] [Data Sc. Faculty]	[Core for 2nd yr i2DSc; Core for 2nd yr i2M]	
* runs in parallel.			

Third year		
Code	Course details	Other information
Course code	Course Name Course structure Instructor name(s)	Mention if Minor Mention if compulsory for other major students
MAT 403/MSM 503	Theory of Ordinary Differential Equations [3003] Prof. M P Rajan	[core course for 3rd yr BS-MS regular & i2M, 1st yr MSc and 1st yr IPhD] [Protected Minor for 4th year]
MAT 402/MSM 502	Galois Theory [3003] Dr. Sarbeswar Pal	[core course for 3rd yr BS-MS, 1st yr MSc and 1st yr IPhD]
MAT 404/MSM 504	Topology [3003] Dr. Shrihari Sridharan	[core course for 3rd yr BS-MS, 1st yr MSc and 1st yr IPhD; elective for i2M] [Can be a Minor for 4th year]
MAT 401/MSM 501	Measure Theory [3003] Dr. Jayanta Sarkar	[core course for 3rd yr BS-MS regular & i2M, 1st yr MSc and 1st yr IPhD]
MAT 310/MSM 505/DSC 411	Probability Theory and Stochastic Processes [3003] Prof. Utpal Manna	[core course for 3rd yr BS-MS regular & i2M & DSC, 1st yr MSc and 1st yr IPhD]
i2M 401/DSC 412/MAT 5501	Scientific Computing (3 Credits) [3001] Dr. Sudarshan Kumar K	[core course for 3rd yr i2M and DSC; elective for 1st yr MSc]
i2M 402/DSC 412/MAT 5502	Scientific Computing (1 credit) [0021] [SEC] Dr. Sudarshan Kumar K	[core course for 3rd yr i2M and DSC; elective for 1st yr MSc]
DSC 314/MAT 5514	Data Structures [3003] Data Sc. Faculty	[core course for 3rd yr i2M, 2nd yr DSC; elective for 1st yr MSc; Core for 4th yr BS-MS, 4th yr i2M, 2nd yr IPhD in pre-NEP batch]
DSC 317/MAT 5517	Data Structures Lab [0021] [SEC] Data Sc. Faculty	[core course for 3rd yr i2M, 2nd yr DSC; elective for 1st yr MSc; Core for 4th yr BS-MS, 4th yr i2M, 2nd yr IPhD in pre-NEP batch]
DSC 414/i2M4514 [3003]	Advanced Artificial Intelligence [3003] Data Sc. Faculty	[core for 3rd yr i2DSc, elective for 3rd yr i2M]

Fourth year			
Code	Course details	Other information	
Course code	Course Name Course structure Instructor name(s)	Mention if Minor/Open- elective Mention if compulsory for other major students	
MAT 421/MSM421	Functional Analysis [3003] Dr. Devaraj P	[core for 4th yr BS-MS, i2M, 2nd yr MSc and IPhD]	
MAT 422/MSM 422/MAT 4522/MAT 6206	Algebraic Topology [3003] Dr. Abhijeet Ghanwat	[core for 4th yr BS-MS & 2nd yr IPhD; elective for 2nd yr MSc; Stream course for 1st yr PhD]	
MAT 423/MSM 423/MAT4523/MAT 6203	Differential Geometry [3003] Dr. Saikat Chatterjee	[core for 4th yr BS-MS, 2nd yr MSc and IPhD; elective for i2M; Stream course for 1st yr PhD]	
MAT 424/MSM 424/MAT 4524	Number Theory and Cryptography [3003] Dr. Jyothsna Sivaraman	[core for 4th yr BS-MS and 2nd yr IPhD; elective for 2nd yr MSc]	
i2M 421/i2M 4521	Variational Methods and Control Theory [3003] Dr. Dhanya Rajendran and Dr. Sheetal Dharmatti [50% sharing by each]	[core for 4th yr i2M; elective for 4th & 5th yr BS-MS, 2nd yr MSc, 2nd yr IPhD]	
i2M 422/i2M 4522	High Performance Computing [3003] Dr. Nagaiah Chamakuri	[core for 4th yr i2M; elective for 4th & 5th yr BS-MS, 2nd yr MSc, 2nd yr IPhD]	
i2M 423/i2M 4523/MAT 6205	Finite Element Methods [3003] Dr. Asha Dond	[core for 4th yr i2M; elective for 4th & 5th yr BS-MS, 2nd yr MSc, 2nd yr IPhD; Stream course for 1st yr PhD]	

