

Integrated MSc in Mathematics with Minor in Data Science (2018)

Incorporating Changes made up to June 2021

Course Code	Course Title	LTP	Cr	ES	Course Code	Course Title	LTP	Cr	ES
SEMESTER 1					SEMESTER 2				
18MAT107	Single Variable Calculus	3 1 0	4		18MAT121	Multivariable Calculus	3 1 0	4	
18PHY105	Introduction to Mechanics	3 1 0	4		18MAT123	Ordinary Differential Equations	3 1 0	4	
18MAT108	Vectors and Geometry	3 1 0	4		18MAT124	Discrete Mathematics	3 1 0	4	
18ENG101	Communicative English	2 0 2	3		18CSA112	Introduction to Programming 2	3 0 2	4	
18CSA102	Introduction to Programming 1	3 0 2	4		18ENG121	Professional Communication	1 0 2	2	
	Language 1	1 0 2	2		18CUL111	Cultural Education 2	2 0 0	2	
18CUL101	Cultural Education 1	2 0 0	2		18MAT182	Mathematics Lab 2	0 0 2	1	
18MAT181	Mathematics Lab 1	0 0 2	1			Language 2	1 0 2	2	
	TOTAL		24			TOTAL		23	
SEMESTER 3					SEMESTER 4				
18MAT209	Linear Algebra 1	3 1 0	4		18MAT221	Numerical Methods	3 1 0	4	
18MAT210	Transforms & PDE	3 1 0	4		18MAT218	Real Analysis 1	3 1 0	4	
18MAT205	Introduction to Probability and Statistics	3 1 0	4		18MAT223	Abstract Algebra 1	3 1 0	4	
18CSA209	Data Structures & Algorithms	3 1 0	4		18MAT216	Statistical Inference	3 1 0	4	
18ENV300	Environmental Science and sustainability	3 0 0	3		18MAT285	Python Lab for Numerical Methods	0 0 2	1	
18MAT283	Computing using R (Lab 1)	0 0 2	1		18MAT286	Computing Using R (Lab 2)	0 0 2	1	
18MAT284	Mathematics Lab 3	0 0 2	1		18AVP211	Amrita Value Programme 2	1 0 0	1	
18AVP201	Amrita Value Programme 1	1 0 0	1		18SSK201	Life Skills 1	1 0 2	2	
	TOTAL		22			TOTAL		21	
SEMESTER 5					SEMESTER 6				
18MAT305	Real Analysis 2	3 1 0	4		18MAT317	Linear Algebra 2	3 1 0	4	
18MAT304	Complex Analysis 1	3 1 0	4		18MAT318	ODE & Calculus of Variations	3 1 0	4	
18MAT390	Open Elective / Live in Lab	3 0 0	3		18MAT319	Optimization Techniques	3 1 0	4	
18MAT306	Operations Research	3 1 0	4		18MAT315	Complex Analysis 2	3 1 0	4	
18CSA308	Machine Learning 1	3 1 0	4		18CSA316	Machine Learning 2	3 1 0	4	
18MAT383	OR Lab	0 0 2	1		18CSA387	Machine Learning Lab 2	0 0 2	1	
18CSA386	Machine Learning Lab 1	0 0 2	1		18MAT382	Optimization Lab	0 0 2	1	
18SSK211	Life Skills 2	1 0 2	2						
	TOTAL		23			TOTAL		22	
						TOTAL (for Exit-option students)		135	
SEMESTER 7					SEMESTER 8				
18MAT507	Abstract Algebra 2	3 1 0	4		18MAT516	Measure and Integration	3 1 0	4	
18MAT508	Real Analysis 3	3 1 0	4		18MAT517	Stochastic Processes	3 1 0	4	
18MAT506	Topology	3 1 0	4		18MAT519	Functional Analysis	3 1 0	4	
18MAT509	Multivariate Statistics	3 1 0	4		18MAT518	PDE & Integral Equations	3 1 0	4	
18CSA506	Data Visualization	3 0 2	4		18CSA511	Database Management for Big Data	3 1 0	4	
18CSA583	Computing Using R (Lab 3)	0 0 2	1		18CSA584	Computing Using R (Lab 4)	0 0 2	1	
18MAT591	Seminar	0 0 2	1						
	TOTAL		22			TOTAL		21	
SEMESTER 9					SEMESTER 10				
	Elective 1	3 0 0	3		18MAT697	Project		15	
	Elective 2	3 0 0	3						
18MAT692	Mini Project		6						
	TOTAL		12			TOTAL		15	
						TOTAL		205	
LANGUAGES									
Paper I					Paper II				
18HIN101	Hindi I	1 0 2	2		18HIN111	Hindi II	1 0 2	2	
18KAN101	Kannada I	1 0 2	2		18KAN111	Kannada II	1 0 2	2	
18MAL101	Malayalam I	1 0 2	2		18MAL111	Malayalam II	1 0 2	2	
18SAN101	Sanskrit I	1 0 2	2		18SAN111	Sanskrit II	1 0 2	2	
ELECTIVES									
18MAT633	Algebraic Topology	3 0 0	3						
18MAT635	Commutative Algebra	3 0 0	3						
18MAT660	Graph Theory	3 0 0	3						
18MAT667	Differential Geometry	3 0 0	3						
18MAT668	Advanced Complex Analysis	3 0 0	3						
18MAT669	Analytic Number Theory	3 0 0	3						
18CSA678	Advanced topics in Machine learning	3 0 0	3						
18CSA679	Advanced topics in Deep learning	3 0 0	3						

OPEN ELECTIVES

Course Code	Course Title	L – T – P	Cr	ES
18OEL231	Advertising	3 0 0	3	J
18OEL232	Basic Statistics	3 0 0	3	J
18OEL233	Citizen Journalism	3 0 0	3	J
18OEL234	Creative Writing for Beginners	3 0 0	3	J
18OEL235	Desktop Support and Services	3 0 0	3	J
18OEL236	Development Journalism	3 0 0	3	J
18OEL237	Digital Photography	3 0 0	3	J
18OEL238	Emotional Intelligence	3 0 0	3	J
18OEL239	Essence of Spiritual Literature	3 0 0	3	J
18OEL240	Film Theory	3 0 0	3	J
18OEL241	Fundamentals of Network Administration	3 0 0	3	J
18OEL242	Gender Studies	3 0 0	3	J
18OEL243	Glimpses of Indian Economy and Polity	3 0 0	3	J
18OEL244	Graphics and Web-designing Tools	3 0 0	3	J
18OEL245	Green Marketing	3 0 0	3	J
18OEL246	Healthcare and Technology	3 0 0	3	J
18OEL247	History of English Literature	3 0 0	3	J
18OEL248	Indian Writing in English	3 0 0	3	J
18OEL249	Industrial Relations and Labour Welfare	3 0 0	3	J
18OEL250	Introduction to Ancient Indian Yogic and Vedic Wisdom	3 0 0	3	J
18OEL251	Introduction to Computer Hardware	3 0 0	3	J
18OEL252	Introduction to Event Management	3 0 0	3	J
18OEL253	Introduction to Media	3 0 0	3	J
18OEL254	Introduction to Right to Information Act	3 0 0	3	J
18OEL255	Introduction to Translation	3 0 0	3	J
18OEL256	Linguistic Abilities	3 0 0	3	J
18OEL257	Literary Criticism and Theory	3 0 0	3	J
18OEL258	Macro Economics	3 0 0	3	J
18OEL259	Managing Failure	3 0 0	3	J
18OEL260	Media Management	3 0 0	3	J
18OEL261	Micro Economics	3 0 0	3	J
18OEL262	Micro Finance, Small Group Management and Cooperatives	3 0 0	3	J
18OEL263	Negotiation and Counselling	3 0 0	3	J
18OEL264	New Literatures	3 0 0	3	J
18OEL265	Non-Profit Organization	3 0 0	3	J
18OEL266	Personal Effectiveness	3 0 0	3	J
18OEL267	Perspectives in Astrophysics and Cosmology	3 0 0	3	J
18OEL268	Principles of Marketing	3 0 0	3	J
18OEL269	Principles of Public Relations	3 0 0	3	J
18OEL270	Science, Society and Culture	3 0 0	3	J
18OEL271	Statistical Analysis	3 0 0	3	J
18OEL272	Teamwork and Collaboration	3 0 0	3	J
18OEL273	The Message of Bhagwad Gita	3 0 0	3	J
18OEL274	Understanding Travel and Tourism	3 0 0	3	J
18OEL275	Videography	3 0 0	3	J
18OEL276	Vistas of English Literature	3 0 0	3	J
18OEL277	Web-Designing Techniques	3 0 0	3	J
18OEL278	Organic Farming	3 0 0	3	J
18OEL279	Basic Legal Awareness on Protection of Women and Rights	3 0 0	3	J
18OEL280	Ritual Performances of Kerala	3 0 0	3	J
18OEL281	Documenting Social Issues	3 0 0	3	J
18OEL282	Fabrication of Advanced Solar Cell	3 0 0	3	J
18OEL283	Basic Concepts of X-ray Diffraction	3 0 0	3	J
18OEL284	Introduction to FORTRAN and GNUPLOT	3 0 0	3	J
18OEL285	Introduction to Porous Materials	3 0 0	3	J
18OEL286	Forensic Science	3 0 0	3	J
18OEL287	Introduction to solar Physics	3 0 0	3	J
18OEL288	Recycling Recovery and Treatment Methods for Wastes	3 0 0	3	J
18OEL289	Acting and Dramatic Presentation	2 0 2	3	J
18OEL290	Computerized Accounting	2 0 2	3	J
18OEL291	Kerala Mural Art and Painting	2 0 2	3	J
18OEL292	Painting	2 0 2	3	J
18OEL293	Reporting Rural Issues	3 0 0	3	J