**Course Structure: Five year Integrated M. Sc. in Mathematics** 

	Course	se Structure: Five year Integrated M. Sc. in Ma				1
semester	code	Course Title	L	Т	Р	Credit
Third Semes	ster					_
3rd	MA209	Theory of Linear Algebra	3	1	0	4
	MA111	Complex Variables and PDE: Mathematics - III	3	1	0	4
	MA112	Introduction to Data structures and Algorithms	3	0	0	3
	CS105	Object oriented Methodology	3	1	0	4
	CS106	Programming lab	0	0	3	1
	CH104	Green Technology (Environmental Science)	3	1	0	4
Semester To	otal					20
Fourth Sem	ester					
	MA207	Probability and Statistics	3	0	0	3
4th	MA117	Discrete Mathematics	3	1	0	4
	MA118	Algebra - I	3	1	0	4
	MA119	Analysis - I	3	1	0	4
	HS107	Industrial Economics and Financial Management	3	0	0	3
	MA120	Programming Lab - II	0	0	6	2
Semester To	otal		-	•		20
						-
Fifth Semes	ter					
Ful	MA121	Topology	3	1	0	4
	MA122	Advanced Calculus	3	1	0	4
	MA123	Ordinary Differential Equation	3	1	0	4
5th	MA124	Numerical Analysis	3	0	0	3
	MA125	Numerical Analysis Lab	0	0	3	1
	MA126	Functional Analysis	3	1	0	4
Semester To	otal	•	-			20
						•
Sixth Semes	ter					
6th	MA127	Operations Research	3	0	0	3
	MA128	Operations Research Lab	0	0	3	1
	MA129	Partial Differential Equation	3	1	0	4
	MA130	Measure Theory and Integration	3	1	0	4
	MA1xx	Elective – 1 (From Elective Group A)	3	0	0	3
	MA1xx	Elective – 2 (From Elective Group A)	3	0	0	3
	MA191	Seminar	0	0	6	2
	GE103	Industrial Interaction and Soft Skill Development	0	0	3	0
Semester To						20
		onths) compulsory and to be done during Summer Vaca	ation and	d shall h	e evalı	
Seventh Ser		, ,				
22.2	MA131	Introduction to Continuum mechanics	3	1	0	4
	IAILATOT	ma dadedon to continuant incentantes	ر		9	7

7th	MA132	Numerical Solutions of Ordinary and Partial Differential Equation	3	1	0	4
	MA133	Numerical ODE and PDE Lab	0	0	3	1
	MA1xx	Elective - 3 (From Elective Group B)	3	0	0	3
	MA1xx	Elective – 4 (From Elective Group B)	3	0	0	3
	DD1xx	Open Elective - I	3	0	0	3
	MA190	Industrial Training	0	0	3	1
Semester Tota	ıl					19
<b>Eight Semeste</b>	r					
	MA135	Theory of Computation	3	1	0	4
	MA136	Mathematical Logic	3	0	0	3
_	MA1xx	Elective - 5 (From Elective Group B)	3	0	0	3
8th	MA1xx	Elective – 6 (From Elective Group B)	3	0	0	3
	DD1xx	Open Elective – II (HSS/Science/ Engg. Dept Elective)	3	0	0	3
	MA194	Minor Project	0	0	12	4
Semester Tota	1				-	20
Ninth Semeste	er					
Ottle					_	2
O+b	MA192	Seminar and Comprehensive Viva - I	0	0	6	2
9th	MA192 MA195	Seminar and Comprehensive Viva - I Thesis (to be continued)	0	0	6 48	16
9th Semester Tota	MA195				_	_
	MA195				_	16
	MA195				_	16
Semester Tota Tenth Semeste	MA195				_	16
Semester Tota	MA195 al	Thesis (to be continued)	0	0	48	16 18
Semester Tota Tenth Semeste	MA195 er MA193 MA196	Thesis (to be continued)  Seminar and Comprehensive Viva - II	0	0	48	16 18
Semester Tota Tenth Semeste  10th	MA195 er MA193 MA196	Thesis (to be continued)  Seminar and Comprehensive Viva - II	0	0	48	16 18 2 16
Semester Tota Tenth Semeste  10th	MA195 er MA193 MA196	Thesis (to be continued)  Seminar and Comprehensive Viva - II	0	0	48	16 18 2 16
Semester Tota  Tenth Semeste  10th  Semester Tota	MA195 er MA193 MA196	Thesis (to be continued)  Seminar and Comprehensive Viva - II	0	0	48	16 18 2 16 18
Semester Tota  Tenth Semeste  10th  Semester Tota	MA195 er MA193 MA196	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis	0	0	48	16 18 2 16 18
Tenth Semester  10th  Semester Tota  Grand Total	MA195 er MA193 MA196	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A	0 0	0 0	6 48	16 18 2 16 18
Semester Total  Tenth Semester  10th  Semester Total  Grand Total	MA195  MA193  MA196  II  MA141	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I	0 0 0	0 0 0	6 48 0	16 18 2 16 18 200
Semester Total  Tenth Semester  10th  Semester Total  Grand Total  Group A (EL)  Group A (EL)	MA195  MA193  MA196  MA141  MA141	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II	0 0 0	0 0 0	6 48 0 0	16 18 2 16 18 200 3 3
Tenth Semester  Toth  Semester Tota  Grand Total  Group A (EL)  Group A (EL)  Group A (EL)	MA195  MA193  MA196  MA141  MA142  MA143	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra	0 0 0 3 3 3 3 3 3	0 0 0 0	6 48 0 0 0	16 18 2 16 18 200 3 3 3
Semester Total  Tenth Semester  10th  Semester Total  Group A (EL)  Group A (EL)  Group A (EL)  Group A (EL)	MA195  MA193  MA196  MA141  MA141  MA142  MA143  MA144	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry	0 0 0 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0	6 48 0 0 0 0	16 18 2 16 18 200 3 3 3 3
Semester Total  Tenth Semester  10th  Semester Total  Grand Total  Group A (EL)	MA195  MA193  MA196  MA141  MA141  MA142  MA143  MA144  MA145	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry Algebraic Topology	0 0 0 0 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0	6 48 0 0 0 0 0	16 18 2 16 18 200 3 3 3 3 3
Semester Total  Tenth Semester  10th  Semester Total  Group A (EL)	MA195  MA193  MA196  MA141  MA142  MA143  MA144  MA145  MA146	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry Algebraic Topology Number Theory	0 0 0 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0	6 48 0 0 0 0 0 0	16 18 2 16 18 200 3 3 3 3 3 3
Semester Total  Tenth Semester  10th  Semester Total  Group A (EL)	MA195  MA193  MA196  MA141  MA142  MA143  MA144  MA145  MA146  MA147	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry Algebraic Topology Number Theory Applied Matrix Theory	0 0 0 0 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0	6 48 0 0 0 0 0 0 0	16 18 2 16 18 200 3 3 3 3 3 3 3
Semester Total  Tenth Semester  10th  Semester Total  Group A (EL)	MA195  MA193  MA196  MA141  MA142  MA143  MA144  MA145  MA146  MA147  MA148	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry Algebraic Topology Number Theory Applied Matrix Theory Approximation Theory	0 0 0 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0	6 48 0 0 0 0 0 0 0	16 18 2 16 18 200 3 3 3 3 3 3 3 3
Tenth Semester  Tenth Semester  Total  Group A (EL)	MA195  MA193  MA196  MA196  MA141  MA142  MA143  MA144  MA145  MA146  MA147  MA148  MA149	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry Algebraic Topology Number Theory Applied Matrix Theory Approximation Theory Advanced Complex Analysis	0 0 0 0 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0	6 48 0 0 0 0 0 0 0 0	16 18 2 16 18 200 3 3 3 3 3 3 3 3 3
Semester Total  Tenth Semester  10th  Semester Total  Group A (EL)  Group A (EL)	MA195  MA193  MA196  MA196  MA141  MA142  MA143  MA144  MA145  MA146  MA147  MA148  MA149  MA150	Thesis (to be continued)  Seminar and Comprehensive Viva - II Thesis  List of Electives Group - A Probability Theory- I Algebra-II Commutative Algebra Differential Geometry Algebraic Topology Number Theory Applied Matrix Theory Approximation Theory Advanced Complex Analysis Computational Linear Algebra	0 0 0 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 0	6 48 0 0 0 0 0 0 0 0 0	16 18 2 16 18 200 3 3 3 3 3 3 3 3 3 3

Group B (EL)	MA161	Probability Theory- II	3	0	0	3
Group B (EL)	MA162	Stochastic Processes	3	0	0	3
Group B (EL)	MA163	Mathematical Methods	3	0	0	3
Group B (EL)	MA164	Optimization	3	0	0	3
Group B (EL)	MA165	Statistical Simulation and Data Analysis	3	0	0	3
Group B (EL)	MA166	Multivariate Analysis	3	0	0	3
Group B (EL)	MA167	Statistical Inference-II	3	0	0	3
Group B (EL)	MA168	Time Series Analysis	3	0	0	3
Group B (EL)	MA169	Finite Element Method	3	0	0	3
Group B (EL)	MA170	Computational fluid dynamics	3	0	0	3
Group B (EL)	MA171	Financial Mathematics	3	0	0	3
Group B (EL)	MA172	Graph theory and algorithms	3	0	0	3
Group B (EL)	MA173	Nonlinear dynamical System	3	0	0	3
Group B (EL)	MA174	Neural Network	3	0	0	3
Group B (EL)	MA175	Parrallel Numerical Algorithms	3	0	0	3
Group B (EL)	MA176	Similarity transformation and perturbation method	3	0	0	3
Group B (EL)	MA177	Banach Algebra	3	0	0	3
Group B (EL)	MA178	Advanced Numerical Methods	3	0	0	3
Group B (EL)	MA179	Nonlinear Programming	3	0	0	3
Group B (EL)	MA180	Theory of Operator	3	0	0	3