

Department of Mathematics

INTEGRATED M.Sc. (APPLIED MATHEMATICS)

First Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-001	MathematicCSN-1	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PHN-001	Mechanics	BSC	4	3	0	2	3	0	15	25	20	40	-
3.	CEN-105	Introduction to Environmental Studies	GSC	3	3	0	0	3	0	25	-	25	50	-
4.	HSN-001B	Communication Skills (Advance)	HSSC	2	1	-	2	2	-	25	-	25	50	-
	HSN-001A	Communication Skills (Basic)	HSSC	2	1	0	2	2	0	25	-	25	50	-
5.	HSN-002	Ethics and Self Awareness	HSSC	2	1	1	0	2	0	25	-	25	50	-
6.	MAN-101	Introduction to Mathematical Sciences	PCC	2	2	0	0	-	-	-	-	-	100	-
7.	MAN-103	Introduction to Computer Programming	ESC	4	3	0	2	3	0	15	25	20	40	-

First Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-004	Numerical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	PHN-008	Electromagnetic Theory	BSC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-102	Linear Algebra	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-104	Real Analysis I	PCC	4	3	1	0	3	0	25	-	25	50	-
5.	MAN-106	Data Structures	PCC	4	3	0	2	3	0	15	25	20	40	-
6.	ECN-102	Fundamental of Electronics	ESC	4	3	1	0	3	0	25	-	25	50	-

Second Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	CEN-102	Solid Mechanics	ESC	4	3	1	0	3	0	25	-	25	50	-
2.	MAN-201	Complex Analysis I	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-203	Discrete Mathematics	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-205	Ordinary and Partial Differential Equations	PCC	4	3	1	0	3	0	25	-	25	50	-
5.	MAN-291	Design and Analysis of Algorithms	PCC	3	3	0	0	3	0	25	-	25	50	-

Second Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	HSN-ELE	HSS Elective Course	HSSMEC	4	-	-	-	-	-	-	-	-	-	-
2.	CEN-108	Fluid Mechanics	ESC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-202	Transform Techniques	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-204	Database Management System	PCC	4	3	1	0	3	0	25	-	25	50	-
5.	MAN-206	Graph Theory	PCC	4	3	1	0	3	0	25	-	25	50	-
6.	MAN-208	Number Theory	PCC	4	3	1	0	3	0	25	-	25	50	-

Third Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-301	Abstract Algebra I	PCC	4	3	1	0	3	0	25	-	25	50	-
2.	MAN-303	Mathematical Statistics	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-305	Linear Programming	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-ELE1	Department Elective I	PEC	3	3	0	0	3	0	25	-	25	50	-
5.	BM-ELE	Management Elective Course	HSSMEC	3	3	0	0	-	-	25	-	25	50	-
6.	MAN-391	Technical Communication	PCC	2	2	0	0	-	-	25	-	25	50	-

Third Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
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1.	MAN-300	Project	PCC	4	-	-	-	-	-	-	-	30	70	-
2.	MAN-302	Math. Modeling & Simulation	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-304	Theory of Computation	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-ELE2	Department Elective II	PEC	3	3	0	0	3	0	25	-	25	50	-
5.	OEC	Open Elective-I	OEC	3	3	0	0	-	-	-	-	-	-	-
6.	MSC1	Minor Specialization Course	MSC	3/4	3	-	0	3	0	-	-	-	50	-
7.	MAN-399	Educational Tour	PCC	0	-	-	-	-	-	-	-	-	-	-

Fourth Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-501	Theory of Ordinary Differential Equations	PCC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-503	Real Analysis II	PCC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-505	Topology	PCC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-507	Statistical Inference	PCC	3	3	0	0	3	0	25	-	25	50	-
5.	MAN-ELE3	Department Elective III	PEC	3/4	3	0	0	3	0	25	-	25	50	-
6.	OEC	Open Elective II	OEC	3	3	0	-	3	0	15	0/25	-	-	-
7.	MSC2	Minor Specialization Course	MSC	3/4	3	-	0	3	0	-	-	-	50	-

Fourth Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-502	Advanced Numerical Analysis	PCC	4	3	1	0	3	0	25	-	25	50	-
2.	MAN-504	Abstract Algebra II	PCC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-506	Nonlinear Programming	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-508	Theory of Partial Differential Equations	PCC	3	3	0	0	3	0	25	-	25	50	-
5.	MAN-510	Complex Analysis II	PCC	3	3	0	0	3	0	25	-	25	50	-
6.	MAN-ELE4	Department Elective IV	PEC	3/4	3	0	0	3	0	25	-	25	50	-
7.	MSC3	Minor Specialization Course	MSC	3/4	3	-	0	3	0	-	-	-	50	-

Fifth Year (Autumn Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-601	Fluid Dynamics	PCC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-603	Tensors and Differential Geometry	PCC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-605	Functional Analysis	PCC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-699	Seminar	PCC	2	-	-	-	-	-	-	-	30	70	-
5.	MAN-ELE5	Department Elective V	PEC	3	3	0	0	3	0	25	-	25	50	-
6.	MAN-ELE6	Department Elective VI	PEC	3	3	0	0	3	0	25	-	25	50	-

Fifth Year (Spring Semester)

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-600	Dissertation	PCC	12	-	-	-	-	-	-	-	30	70	-
2.	MAN-ELE7	Department Elective VII	PEC	3	3	0	0	3	0	25	-	25	50	-
3.	MSC4	Minor Specialization Course	MSC	3/4	3	-	0	3	0	25	-	25	50	-
4.	MSC5	Minor Specialization Course	MSC	3/4	3	-	0	3	0	25	-	25	50	-

Department Electives

Department Elective Courses (MA Elective-I and MA Elective-II) to be chosen in Third Year

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-321	Biomathematics	PEC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-322	Combinatorial Mathematics	PEC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-323	Computer Graphics	PEC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-324	Fuzzy Sets and Fuzzy Logic	PEC	3	3	0	0	3	0	25	-	25	50	-
5.	MAN-325	Mathematical Imaging Techniques	PEC	3	3	0	0	3	0	25	-	25	50	-
6.	MAN-326	Numerical Optimization	PEC	3	3	0	0	3	0	25	-	25	50	-

Department Elective Courses (MA Elective-III and MA Elective-IV) to be chosen in Fourth Year

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-521	Advanced Graph Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-522	Computer Vision	PEC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-523	Control Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-524	Integral Equations and Calculus of Variations	PEC	3	3	0	0	3	0	25	-	25	50	-
5.	MAN-525	Robotics and Control	PEC	3	3	0	0	3	0	25	-	25	50	-
6.	MAN-526	Soft Computing	PEC	3	3	0	0	3	0	25	-	25	50	-
7.	MAN-527	Stochastic Process	PEC	3	3	0	0	3	0	25	-	25	50	-

Department Elective Courses (MA Elective-V, MA Elective-VI and MA Elective-VII) to be chosen in Fifth Year

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-621	Abstract Harmonic Analysis	PEC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-622	Algebraic Number Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-623	Algebraic Topology	PEC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-624	Approximation Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
5.	MAN-625	Coding Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
6.	MAN-626	Commutative Algebra	PEC	3	3	0	0	3	0	25	-	25	50	-
7.	MAN-627	Dynamical Systems	PEC	3	3	0	0	3	0	25	-	25	50	-
8.	MAN-628	Evolutionary Algorithms	PEC	3	3	0	0	3	0	25	-	25	50	-
9.	MAN-629	Financial Mathematics	PEC	3	3	0	0	3	0	25	-	25	50	-
10.	MAN-630	Finite Element Methods	PEC	3	3	0	0	3	0	25	-	25	50	-
11.	MAN-631	Multivariate Techniques	PEC	3	3	0	0	3	0	25	-	25	50	-
12.	MAN-632	Optimal Control Theory	PEC	3	3	0	0	3	0	25	-	25	50	-

13.	MAN-633	Orthogonal Polynomials and Special Functions	PEC	3	3	0	0	3	0	25	-	25	50	-
14.	MAN-634	Parallel Computing	PEC	3	3	0	0	3	0	25	-	25	50	-
15.	MAN-635	Wavelet Theory	PEC	3	3	0	0	3	0	25	-	25	50	-

Courses Offered by Department for Minor Degree

S.No.	Code	Title	Area	Cr	L	T	P	TH	PH	CWS	PRS	MTE	ETE	PRE
1.	MAN-004	Numerical Methods	BSC	4	3	1	0	3	0	25	-	25	50	-
2.	MAN-104	Real Analysis I	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-201	Complex Analysis I	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-202	Transform Techniques*	PCC	4	3	1	0	3	0	25	-	25	50	-
5.	MAN-206	Graph Theory	PCC	4	3	1	0	3	0	25	-	25	50	-
6.	MAN-301	Abstract Algebra I	PCC	4	3	1	0	3	0	25	-	25	50	-
7.	MAN-303	Mathematical Statistics**	PCC	4	3	1	0	3	0	25	-	25	50	-
8.	MAN-502	Advanced Numerical Analysis	PCC	4	3	1	0	3	0	25	-	25	50	-
9.	MAN-503	Real Analysis II	PCC	3	3	0	0	3	0	25	-	25	50	-
10.	MAN-504	Abstract Algebra II	PCC	3	3	0	0	3	0	25	-	25	50	-
11.	MAN-510	Complex Analysis II	PCC	3	3	0	0	3	0	25	-	25	50	-

* will not be offered who already studied MA-002

** will not be offered who already studied MA-006