

**DEPARTMENT OF MATHEMATICS**  
**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**  
(To be implemented from 2015-2016 academic session)

Program Code : 613 M.Sc. (Mathematics)  
Department : MA Mathematics  
Year : I

Teaching Scheme					Contact Hours/Week			Exam. Duration		Relative Weight (%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Semester-I (Autumn)</b>														
1.	MAN-511	Theory of Ordinary Differential Equations	PCC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-513	Real Analysis	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-515	Topology	PCC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-517	Abstract Algebra	PCC	4	3	1	0	3	0	25	-	25	50	-
5.	MAN-519	Computer Programming	PCC	4	3	0	2	3	0	15	25	20	40	-
6.	HSN-501	Technical Communication	PCC	2	2	0	0	2	0	25	-	25	50	-
		<b>Total</b>		<b>20</b>	<b>17</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	-
<b>Semester-II (Spring)</b>														
1.	MAN-512	Numerical Analysis	PCC	4	3	1	0	3	0	25	-	25	50	-
2.	MAN-514	Linear Algebra	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-516	Probability & Statistics	PCC	4	3	1	0	3	0	25	-	25	50	-
4.	MAN-518	Theory of Partial Differential Equations	PCC	3	3	0	0	3	0	25	-	25	50	-
5.	MAN-520	Complex Analysis	PCC	4	3	1	0	3	0	25	-	25	50	-
6.	-	Departmental Elective-I	PEC	3	-	-	-	-	-	-	-	-	-	-
		<b>Total</b>		<b>22</b>	<b>15</b>	<b>4</b>	<b>0</b>							

**DEPARTMENT OF MATHEMATICS  
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code : 613 M.Sc. (Mathematics)  
Department : MA Mathematics  
Year : II

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Semester-III (Autumn)</b>														
1.	MAN-611	Functional Analysis	PCC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-613	Operations Research	PCC	4	3	1	0	3	0	25	-	25	50	-
3.	MAN-615	Seminar	PCC	2	-	-	-	-	-	-	-	30	70	-
4.		Departmental Elective-II	PEC	3	-	-	-	-	-	-	-	-	-	-
5.		Departmental Elective-III	PEC	3	-	-	-	-	-	-	-	-	-	-
6.		Departmental Elective-IV	PEC	3	-	-	-	-	-	-	-	-	-	-
		<b>Total</b>		<b>18</b>	<b>6</b>	<b>1</b>	<b>0</b>							
<b>Semester-IV (Spring)</b>														
1.	MAN-612	Project	PCC	8	-	-	-	-	-	-	-	30	70	-
2.		Departmental Elective-V	PEC	3	-	-	-	-	-	-	-	-	-	-
3.		Departmental Elective-VI	PEC	3	-	-	-	-	-	-	-	-	-	-
4.		Departmental Elective-VII	PEC	3	-	-	-	-	-	-	-	-	-	-
		<b>Total</b>		<b>17</b>										

<b>Summary</b>				
Semester	I	II	III	IV
<b>Semester-wise Total Credits</b>	20	22	18	17
<b>Total Credits</b>	77			

**DEPARTMENT OF MATHEMATICS**  
**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**  
**List of Departmental Electives (M.Sc. Mathematics)**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Elective I</b>														
1.	MAN-531	Fuzzy Sets and Fuzzy Logic	PEC	3	3	0	0	3	0	25	-	25	50	-
2.	MAN-532	Graph Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
3.	MAN-533	Integral Equations and Calculus of Variations	PEC	3	3	0	0	3	0	25	-	25	50	-
4.	MAN-534	Mechanics	PEC	3	3	0	0	3	0	25	-	25	50	-
<b>Elective II-VII</b>														
5.	MAN-641	Abstract Harmonic Analysis	PEC	3	3	0	0	3	0	25	-	25	50	-
6.	MAN-642	Advanced Numerical Analysis	PEC	3	3	0	0	3	0	25	-	25	50	-
7.	MAN-643	Algebraic Topology	PEC	3	3	0	0	3	0	25	-	25	50	-
8.	MAN-644	Approximation Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
9.	MAN-645	Coding Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
10.	MAN-646	Combinatorial Mathematics	PEC	3	3	0	0	3	0	25	-	25	50	-
11.	MAN-647	Control Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
12.	MAN-648	Dynamical Systems	PEC	3	3	0	0	3	0	25	-	25	50	-
13.	MAN-649	Financial Mathematics	PEC	3	3	0	0	3	0	25	-	25	50	-
14.	MAN-650	Fluid Dynamics	PEC	3	3	0	0	3	0	25	-	25	50	-
15.	MAN-651	Measure Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
16.	MAN-652	Number Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
17.	MAN-653	Numerical Optimization	PEC	3	3	0	0	3	0	25	-	25	50	-
18.	MAN-654	Orthogonal Polynomials and Special Functions	PEC	3	3	0	0	3	0	25	-	25	50	-
19.	MAN-655	Stochastic Processes	PEC	3	3	0	0	3	0	25	-	25	50	-
20.	MAN-656	Wavelet Theory	PEC	3	3	0	0	3	0	25	-	25	50	-
21.	MAN-657	Advanced Operations Research	PEC	4	3	1	0	3	0	25	-	25	50	-