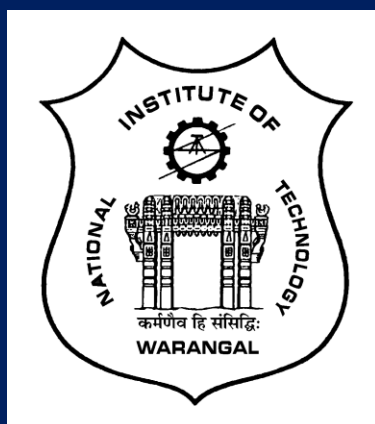


**DEPARTMENT OF MATHEMATICS
NATIONAL INSTITUTE OF TECHNOLOGY
WARANGAL 506 004**



**SCHEME OF INSTRUCTIONS OF
M.Sc. (APPLIED MATHEMATICS)
&
M.Sc. (MATHEMATICS & SCIENTIFIC COMPUTING)**

(Effective from July, 2017)

Scheme of Instruction For **M. Sc. (Applied Mathematics)**

I – Semester

S.No	Course code	Course Name	L	T	P	Cr
1	MA 5101	Real Analysis	3	1	0	4
2	MA 5102	Advanced Modern Algebra	3	1	0	4
3	MA 5103	Ordinary Differential Equations	3	1	0	4
4	MA 5104	Linear Algebra	3	1	0	4
5	MA 5105	Computer Programming & Data Structures (CPDS)	3	1	0	4
6	MA 5106	Numerical Analysis	3	1	0	4
7	MA 5107	CPDS Lab	0	1	2	2
Total			18	7	2	26

II – Semester

SNo	Course code	Course Name	L	T	P	Cr
1	MA 5151	Probability & Statistics	3	1	0	4
2	MA 5152	Partial Differential Equations	3	1	0	4
3	MA 5153	Integral & Discrete Transforms	3	1	0	4
4	MA 5154	Topology	3	1	0	4
5	MA 5155	Mechanics	3	1	0	4
6		ELECTIVE – I	3	0	0	3
7	MA 5156	Computational Laboratory	0	1	2	2
8	MA 5191	Seminar	0	0	2	1
Total			18	6	4	26

III – Semester

SNo	Course code	Course Name	L	T	P	Cr
1	MA 6101	Complex Analysis	3	1	0	4
2	MA 6102	Numer. Solution of Diff. Eqns (NSDE)	3	1	0	4
3	MA 6103	Mathematical Programming	3	1	0	4
4	MA 6104	Functional Analysis	3	1	0	4
5		ELECTIVE – II	3	0	0	3
6		ELECTIVE – III	3	0	0	3
7	MA 6105	Mathematical Programming Lab.	0	1	2	2
8	MA 6141	Seminar	0	0	2	1
Total			18	5	4	25

IV – Semester

SNo	Course code	Course Name	L	T	P	Cr
1	MA 6151	Finite Element Method (FEM)	3	1	0	4
2		ELECTIVE--IV	3	1	0	4
3		ELECTIVE – V	3	0	0	3
4		ELECTIVE – VI	3	0	0	3
5	MA 6152	NSDE and FEM Laboratory	0	1	2	2
6	MA 6192	Comprehensive Viva	0	0	0	2
7	MA 6199	Project Work	0	0	8	4
Total			12	3	10	21

Total number of credits for the course is 98

List of Course Titles for Electives – MSc (Applied Mathematics):

Course Code	ELECTIVE - I
MA 5161	Integral Equations and Tensor Analysis
MA 5162	Mathematical Modeling
MA 5163	Differential Geometry

Course Code	ELECTIVE – II AND III
MA 6111	Multivariate Data Analysis
MA 6112	Fluid Dynamics
MA 6113	Lie group Methods for Differential Equations
MA 6114	Finite Volume Method
MA 6115	Wavelet Analysis
MA 6116	Dynamical Systems

Course Code	ELECTIVE – IV , V & VI
MA 6161	Measure and Integration
MA 6162	Heat and Mass Transfer
MA 6163	Perturbation Methods
MA 6164	Theory of Elasticity
MA 6165	Computational Fluid Dynamics
MA 6166	Bio-Fluid Mechanics
MA6167	Inventory, Queueing Theory & NLPP
MA6168	Hydrodynamic Stability
MA6169	Spectral Methods

Scheme of Instruction for **M. Sc. (Mathematics & Scientific Computing)**

I – Semester

SNo	Course code	Course Name	L	T	P	Cr
1	MA 5101	Real Analysis	3	1	0	4
2	MA 5201	Discrete Mathematics	3	1	0	4
3	MA 5103	Ordinary Differential Equations	3	1	0	4
4	MA 5202	Numerical Linear Algebra	3	1	0	4
5	MA 5203	Problem Solving & Computer Programming(PSCP)	3	1	0	4
6	MA 5204	Algorithmic Approach to Computational Methods	3	1	0	4
7	MA 5205	PSCP Lab	0	1	2	2
Total			18	7	2	26

II – Semester

SNo	Course code	Course Name	L	T	P	Cr
1	MA 5151	Probability & Statistics	3	1	0	4
2	MA 5152	Partial Differential Equations	3	1	0	4
3	MA 5251	Data Structures & Algorithms	3	1	0	4
4	MA 5252	Optimization Techniques	3	1	0	4
5	MA 5253	Object Oriented Programming (OOP)	3	1	0	4
6		ELECTIVE – I	3	0	0	3
7	MA 5254	OOP lab	0	1	2	2
8	MA 5291	Seminar	0	0	2	1
Total			18	6	4	26

III – Semester

SNo	Course Code	Course Name	L	T	P	Cr
1	MA 6101	Complex Analysis	3	1	0	4
2	MA 6201	Elementary Number Theory	3	1	0	4
3	MA 6202	Design and Analysis of Algorithms	3	1	0	4
4	MA 6203	Data Base Management Systems (DBMS)	3	1	0	4
5		ELECTIVE – II	3	0	0	3
6		ELECTIVE – III	3	0	0	3
7	MA 6204	DBMS Lab	0	1	2	2
8	MA 6241	Seminar	0	0	2	1
Total			18	5	4	25

IV – Semester

SNo	Course code	Course Name	L	T	P	Cr
1	MA 6251	Java Programming	3	1	0	4
2		ELECTIVE—IV	3	1	0	4
3		ELECTIVE – V	3	0	0	3
4		ELECTIVE – VI	3	0	0	3
5	MA 6252	Java Programming Lab	0	1	2	2
6	MA 6292	Comprehensive Viva	0	0	0	2
7	MA 6299	Project Work	0	0	8	4
Total			12	3	10	22

Total number of credits for the course is 98

List of Course Titles for Electives – M.Sc(Mathematics & Scientific Computing) :

Course Code	ELECTIVE - I
MA 5261	Graph theory and Algorithms
MA 5262	Fuzzy Mathematics and Applications
MA 5263	Symbolic Computing

Course Code	ELECTIVE – II AND III
MA 6211	Computer Graphics
MA 6112	Fluid Dynamics
MA 6212	Introduction to Python Programming
MA 6213	Elliptic Curves
MA 6214	Neural Networks
MA 6215	Parallel Computing

Course Code	ELECTIVE – IV, V & VI
MA 6261	Theory of Automata
MA 6262	Approximation Theory
MA 6163	Financial Mathematics
MA 6263	Data Mining
MA 6264	Management Information Systems
MA 6265	Cryptography
MA6266	Advanced Optimization Techniques
MA6267	Data Analysis with R
MA6268	Mathematics of Data Science