ANTYODAY MAHAVIDYALAYA, DEVGRAM (Autonomous)

TAH. NARKHED DIST. NAGPUR- 441301 (MS)

NAAC ACCREDITED IN CYCLE – II AT 'B++' GRADE, CGPA 2.93

Master of Mathematics (M. Sc.)

English Medium

NEP Pattern

College Timing: 9:00 AM to 3.30 PM

Two Year Degree Course [M.Sc. I, II (NEP) (Semester Pattern)]

Student will have to opt for Subjects as per following table

M. Sc. Mathematics Program

In this course the aspirants will learn technical and crucial aspects regarding the wider applications of Science and its industrial work ethics. Intake of each specialized course is 22.

Year	Semester	Subjects						
MSc. I Year	Semester I	**DSC**	**DSC**	**DSC**	**DSE**	**RM**	**DSC Practical 1**	**RM Practical 2**
		Algebra	Topology	Ordinary Differential Equations	Elective 1	Research Methodology	Computation with C/C++	Practical RM
	Semester II	**DSC**	**DSC**	**DSC**	**DSE**	**OJT**	**DSC Practical**	
		Real Analysis	Differential Geometry	Advance Numerical Methods	Elective 2	OJT/FP	Numerical Solution With Computer Programming	
MSc. II Year	Semester III	**DSC**	**DSC**	**DSC**	**DSE**	**RP**	**DSC Practical**	
		Complex Analysis	Functional Analysis	Advance Mathematical Methods	Elective 3	Research Project (Minor)	Python Programming	
	Semester IV	**DSC**	**DSC**	**DSC**	**DSE**	**RP**		
		Dynamical System	Measure & Integration Theory	Partial Differential Equations	Elective 4	Research Project (Major)		

Abbreviations:

DSC: Discipline Specific Course
DSE: Discipline Specific Elective
RM: Research Methodology
OJT: On the Job Training/Field Project
RP: Research Project

Basket for Elective Courses

Semester	Course Category	Name of Course
I	Elective 1	• Integral Equations • Fuzzy Mathematics • Equivalent MOOC Course
II	Elective 2	• Classical Mechanics • Operation Research • Equivalent MOOC Course
III	Elective 3	• General Theory of Relativity • Fluid Dynamics • Equivalent MOOC Course
IV	Elective 4	• Cosmology • Number Theory • Equivalent MOOC Course

Distribution of Marks for Semester Pattern

Theory 80 Marks per Subjects, Internal Assessment 20 per Subject

NOTE: - For admission to the M. Sc. Semester I in Mathematics, a candidate shall have offered Mathematics as one of the optional subjects of study and examination at B.Sc. degree or B.Sc. examination with Post B.Sc. diploma course in Mathematics of RTM Nagpur University.

Instructions for On Job Training/Field Project

On job training or a Field Project is a skill based practical program. The objective of this program is to allow the student to gain vocational training in academics/ research/industry based on mathematical concepts. It is also aimed to encourage the student to take-up a life-time vocation based on the program he/she is pursuing. On-job training/field work will also allow the student to work in team and gain experience, which will be helpful in his/her future endeavors.

This program can be carried out in two ways:

(A) Training in external research Institute/ National Institute/ Industry/ Company based on mathematical applications. This program can be carried out with one External Mentor from the sponsoring Institute and Internal Mentor from the Department of Mathematics of the College during M.Sc. Sem-II program. However, this should be not at the cost of the attendance in the regular classes and other departmental activities during the session.

(B) Alternatively, the student can take-up a field-based project that can be assigned by the Internal Mentor from the Department only during M.Sc. Sem-II program. However, such project will be based on field activity that will lead to skill enhancement. The work carried out by the student has to be submitted to the HOD of the Department in the form of Project Report duly signed by the Internal Mentor.

In any case, the student will complete the on-job training/field project during the vacation after the examination of M.Sc. Semester -II but before the commencement of Semester III.

In order to earn credits, the total duration of on-job training/field project will be 120 hours, which normally can be completed in twenty days by working for 6 hours per day. At the end of the on-job training/field project, the student will submit a report containing the details of the work carried out during the current session. The report will be signed by the student, his/her immediate Internal/External mentor during the tenure and the Head of the institute/organization. The report should contain a certificate (printed on the letter head of the institute/organization) issued by the Head of the institute/organization substantiating that the student has worked for 120 hours as an on-job trainee/undertook a field project. The student will be evaluated for the completion of on job training/field work on the basis of report submitted by him/her and the power point presentation made by him/her in the presence of internal and external examiner during the semester end examination.

Research Project Scheme / Guidelines for the Students and Supervisor:

Every student is required to carry out a research project related to any topic/application/ extended topic of the syllabus of Mathematics. It may be in the form of a new research work or review of the topic based on research publications. Student shall refer peer reviewed original research publications and based on findings, write a summary/Abstract of the same. On the basis of this work, student must submit the Project work must be submitted in the form of spiral/hard bound book, typed on one side of the paper containing at least 80 (Eighty) pages. The project work shall comprise of Introduction, Review of literature, Significance and Objective of the study, Methodology, Discussion, Conclusion and References along with the declaration by the candidate that the work is original and not submitted to any University or Organization for award of the degree and certificate by the supervisor and forwarded through Head / Course-coordinator of Centre or the Principal of the College.

Research Project Supervisor

A person selected by the duly constituted Selection Committee in mathematics and approved by the University, exclusively for P.G. course. OR A person selected by the duly constituted Selection Committee in the relevant subject and approved by the University as a full-time regular teacher at U.G. level with Ph. D. OR a Scientist of government or private research laboratory appointed by university as a contributory teacher and having Ph. D. degree in Mathematics can supervise the research project of the student. The topic for the project work shall be assigned to the student by supervisor at the beginning of the respective semester.

Scheme of Evaluation and Distribution of Marks

(1) Continuous Internal Evaluation (CIE) in Theory: Total Maximum Marks 20/ (15 for RM)

(A) Unit Tests: Maximum Marks 12 / (10 for RM). Duration of Examination: One Hour. Pattern of Question Paper: Two offline descriptive Unit Tests each of 12 marks, One Multiple Choice Questions (MCQs) Online/Offline Test of 12 marks, their average be awarded to students.

(B) Overall Participation: Maximum Marks 08 / (05 for RM)

- Attendance in theory classes: 04/ (03 for RM),
- Seminar/Assignment/Power Point Presentation/Paper presentation in Conference/Workshops: 04/ (02 for RM).

Note: A student must have to secure minimum 50% marks in CIE. Failing so, he/she shall not be allowed to appear in Semester End Examination.

(2) Semester End Examination (SEE) in Theory: Maximum Marks 80 / (60 for RM)

Theory Paper: Maximum Marks: 80 / (60 for RM). Duration of Examination: Three Hours/ (Two Hours for RM).

- There shall be Four units in each theory paper.

- There shall be total Nine questions in each paper. Out of these Nine, there shall be Eight questions on Four units with alternative choice from the same unit and one compulsory question based on all four units i.e., Solve FIVE questions, choosing ONE from each unit and Question No. 9 is compulsory. Each question will carry 16 marks (12 marks for RM).

(3) Continuous Internal Evaluation (CIE) in Practical: Total Maximum Marks 50/ (25 for RM)

College Practical Test	30 Marks / (15 for RM)	- Evaluated by Internal
Internal Viva-Voce	05 Marks / (03 for RM)	- Evaluated by Internal
Attendance in Practical	05 Marks / (02 for RM)	- Evaluated by Internal
Practical Record	10 Marks / (05 for RM)	- Evaluated by Internal
Total	**50 Marks/ (25 for RM)**	

(4) General Scheme for Distribution of Marks in Semester End Practical Examination

Maximum Marks: 50 **Time: 3 Hours**

Exercise-1	20 Marks	- Evaluated jointly by Internal and External Examiner
Exercise-2	20 Marks	- Evaluated jointly by Internal and External Examiner
Viva-Voce	10 Marks	- Evaluated by External
Total	**50 Marks**	

(5) General Scheme for Distribution of Marks in Semester End Research Project (RP) Examination

The research project work will carry total 100/200 marks and will be evaluated by both external and internal examiner in the respective Department / Center / Affiliated College. The total 100 marks will have the following four components:

1. Written Project work	30/60 marks	- Evaluated jointly by External and Internal
2. Presentation of RP	10/20 marks	- Evaluated jointly by External and Internal
3. Viva voce examination	10/20 marks	-Evaluated by External Examiner
4. Internal Assessment	50/100 marks	- Evaluated by Internal Examiner
Total	**100/ 200 Marks**	

Note: - In case of increase in fees by the Government / University, the student shall be charged accordingly.