Yashwantrao Chavan Maharashtra Open University
Dnyangangotri near Gangapur Dam, Nashik, Pin Code-422222, Maharashtra(India)

Programme Structure Scheme

For

Post Graduate,
2 Year(s) Master Degree Program in

School of Sciences

Master of Science in Mathematics(V151 - M.Sc. in Mathematics)
(Credits System)

(2023 Pattern - NEP-Open and Distance Learning)
Programme Code: V151

Publisher's Note

This Yashwantrao Chavan Maharashtra Open University has great Pleasure in publishing this programme structure for Post Graduate programme for 2 Year(s) Master Degree Program as "Master of Science in Mathematics" (2023 Pattern - NEP - Open and Distance Learning) under the School of "School of Sciences".

On behalf of the University, I thank experts and authorities of the University for the interest taken and the whole hearted co-operation extended by them in bringing out this publication.

Date: 6/12/2024 5:39:22 PM
Yashwantrao Chavan Maharashtra Open
University,Dnyangangotri near Gangapur Dam,
Nashik, Pin Code-422222, Maharashtra(India) Registrar

Programme Objective(s)

1. This programme has the following broad objectives:

• To prepare the learners, who will understand and apply the basic as well as advanced principles of mathematics for solving problems from science with an emphasis on applications

• To produce the learners who are well-grounded in the fundamentals of Mathematics with the acquisition of the necessary skills, tools, and techniques required in many applications areas

• To develop an ability to study the conceptual problem and critically analyze, and also promote the use of mathematics in industry and applied sciences

• To provide exposure and motivate students for research in current trends of mathematics

•To develop human resources useful in the field of Mathematics.

Programme Outcome

After successful completion of this programme, students will be able to

• Enhance their logical thinking and apply advanced mathematical concepts to solve complex problems.

• Formulate research questions, design experiments or investigations, collect and analyse data, and present their findings in a clear and coherent manner.

• Apply advanced mathematical techniques and tools to analyse and solve challenging problems encountered in mathematics and related fields.

• Formulate mathematical models that represent real-world phenomena, analyse the models using mathematical methods, and interpret the results to make informed decisions or predictions.

• Develop proficiency in utilizing computational tools, software, and programming languages to aid in mathematical analysis, numerical simulations, and data visualization.

• Present complex mathematical concepts, proofs, and research findings to both technical and non-technical audiences.

• Develop a strong foundation for professional growth and lifelong learning in mathematics.

The Master of Science in Mathematics Consists of following 2 programme part(s):

Sr.No.	Programme Part Name	Programme Part Abbrevation	Examination Pattern
1	Year-1	Year-1	Semester
2	Year-2	Year-2	Semester

The Master of Science in Mathematics is available in following medium of instruction/s:

1. English

Programme Part: Year-1 Separate Passing Head: No, Min: 0, Max: 1100, Total Credits: 44.00

Term: Semester I Separate Passing Head: No, Min Courses: 6, Max Courses: 6, Min:0,Max:550, Total Credits: 22.00

The courses for Year-1 - Semester I are classified into following groups:

1.Major Elective (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)

Courses:

MAT506	Operations Research
MAT507	Numerical Analysis

2.Major Mandatory (Min Courses: 4, Max Courses: 4,
Separate Passing Head: No, Max. Marks: 350)
Select minimum 4 course(s)
Select maximum 4 course(s)

Courses:

MAT501	Real Analysis
MAT502	Abstract Algebra
MAT503	Ordinary Differential Equations
MAT504	Programming in C and Scilab

3.Research Methodology (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)

Courses:

RES505	Research Methodology

Term: Semester II Separate Passing Head: No, Min Courses: 6, Max Courses: 6, Min:0,Max:550, Total Credits: 22.00

The courses for Year-1 - Semester II are classified into following groups:

1.Major Elective (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)

Courses:

MAT515	Number Theory
MAT516	Field Theory

2.Major Mandatory (Min Courses: 4, Max Courses: 4,
Separate Passing Head: No, Max. Marks: 350)
Select minimum 4 course(s)
Select maximum 4 course(s)

Courses:

MAT509	Topology
MAT510	Linear Algebra
MAT511	Partial Differential Equations
MAT512	LaTex and Programming in SageMath

3.OJT & FP Elective (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)

Courses:

MAT513	On Job Training
MAT514	Field Project

Programme Part: Year-2 Separate Passing Head: No, Min: 0, Max: 1100, Total Credits: 44.00

Term: Semester III Separate Passing Head: No, Min Courses: 6, Max Courses: 6, Min:0,Max:550, Total Credits: 22.00

The courses for Year-2 - Semester III are classified into following groups:

1.Major Elective (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)
Courses:

MAT606	Discrete Mathematics
MAT607	Differential Geometry
MAT608	Integral Transforms

2.Major Mandatory (Min Courses: 4, Max Courses: 4,
Separate Passing Head: No, Max. Marks: 350)
Select minimum 4 course(s)
Select maximum 4 course(s)
Courses:

MAT601	Complex Analysis
MAT602	Measure and Integration Theory
MAT603	Integral Equations
MAT604	Mathematical Statistics & Combinatorics

3.Reserch Project (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)
Courses:

MAT605	Research Project

Term: Semester IV Separate Passing Head: No, Min Courses: 5, Max Courses: 5, Min:0,Max:550, Total Credits: 22.00

The courses for Year-2 - Semester IV are classified into following groups:

1.Major Elective (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 100)
Select minimum 1 course(s)
Select maximum 1 course(s)
Courses:

MAT613	Cryptography
MAT614	Topics in Fuzzy Mathematics
MAT615	Algebraic Topology

2.Major Mandatory (Min Courses: 3, Max Courses: 3,
Separate Passing Head: No, Max. Marks: 300)
Select minimum 3 course(s)
Select maximum 3 course(s)
Courses:

MAT609	Classical Mechanics
MAT610	Functional Analysis
MAT611	Programming in Python

3.Reserch Project (Min Courses: 1, Max Courses: 1,
Separate Passing Head: No, Max. Marks: 150)
Select minimum 1 course(s)
Select maximum 1 course(s)
Courses:

MAT612	Research Project