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 Physics(V153 - M.Sc. in Physics)

(Credits System)

(2023 Pattern - NEP-Open and Distance Learning)

Programme Code: V153

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 Physics" (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.

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

Programme Objective(s)

1. Programme Objective

This programme has the following broad objectives:

•Identify, formulate and solve Physics problems

•Design and conduct experiments as well as analyse and interpret data

•Apply knowledge of Physics in a different stream of science and to communicate effectively.

•A quire ability to use the techniques, skills, and modern physical tools in real world application.

•Engage in life-long learning and will have recognition.

Programme Outcome

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

• Knowledge to comprehend and appreciate a great variety of phenomena occurring in the Universe, both at micro and macroscopic level in non- relativistic as well as relativistic realm through understanding of basic concepts of Physics.

•Exposure to research within one of the research areas represented at the Department of Physics, through supervised Master Dissertation project.

•Adequate analytical skills on the advanced levels of Physics, needed for plethora of job opportunities in education, research, and industry.

•Competence in core areas of Physics, which is in line with the international standards, aimed at realizing the goals towards skilled India.

The Master of Science in Physics 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 Physics 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:

PHY506	Experimental Techniques in Physics
PHY507	Physics of LASERs

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:

PHY501	Classical Mechanics
PHY502	Electronic Devices
PHY503	Mathematical Methods in Physics
PHY504	Physics I – Practical

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:

PHY515	Fundamentals of Materials Science
PHY516	Medical Physics

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:

PHY509	Atomic and Molecular Physics
PHY510	Electrodynamics
PHY511	Quantum Mechanics - I
PHY512	Physics II - Practical (Computational Methods using 'C' program)

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:

PHY513	On Job Training
PHY514	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:

PHY606	Physics of Thin Film
PHY607	Astronomy and Astrophysics
PHY608	Energy Studies

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:

PHY601	Statistical Mechanics
PHY602	Condensed Matter Physics
PHY603	Quantum Mechanics - II
PHY604	Physics III - Practical

3.Research 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:

PHY605	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:

PHY613	Physics of Nano Materials
PHY614	General Relativity & Cosmology
PHY615	Energy from Waste

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:

PHY609	Nuclear and Particle Physics
PHY610	Electronic Instrumentation
PHY611	Physics IV – Practical

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:

PHY612	Research Project