



**JSPM UNIVERSITY PUNE**

Recognized by UGC u/s 2 (f) of UGC Act 1956 and enacted by the  
State Government of Maharashtra - JSPM University Act, 2022 (Mah.IV of 2023)

**JSPM University Pune**

**Faculty of Science and Technology**

**School of Basic and Applied Sciences**




**NEP aligned Curriculum Structure**

**for**

**PhD (Physics)**

**(Effective from AY: 2024-25)**

	<b>JSPM University Pune</b>		<b>COURSE STRUCTURE</b> (NEP 2020 Aligned)	
	FACULTY OF SCIENCE AND TECHNOLOGY		W. E. F	2024-2025
	SCHOOL OF BASIC AND APPLIED SCIENCES		RELEASE DATE	01/07/2024
	COURSE WORK - DOCTOR OF PHILOSOPHY (PHYSICS)		REVISION NO.	1.0 (NEP)

SEMESTER I (LEVEL 8)																		
COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										TOTAL	CREDITS
							THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)					
TYPE	CODE	COURSE NAME	L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	TOTAL	CREDITS		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)									
PCC	--	Domain Specific Course 1 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	--	Domain Specific Course 2 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
PSMC	230GMAD01	Foundations of Mathematical Modelling and Statistical Techniques	3	-	-	-	30	30	40	100	-	-	-	-	50	2		
RMC	231IRMD01	Research and Publication Ethics	2	-	-	-	30	30	40	50	-	-	50	50	50	2		
RMC	231IRMD02	Research Proposal Writing	2	-	-	-	-	-	-	-	-	-	50	50	50	2		
RMC	231IRMD03	Writing Literature Review	2	-	-	-	-	-	-	-	-	-	50	50	50	1		
SLC	231ISR01	Seminar	-	-	-	4	-	-	-	-	-	-	50	50	50	1		
<b>TOTAL</b>			<b>15</b>			<b>4</b>											<b>500</b>	<b>16</b>

List of PCC/PEC

Sr. No.	Course Type	Course Code	Course Name
1	PCC	230GPHYD01	Complex Time Series Analysis
2	PCC	230GCSD01	Machine Learning And Deep Learning-Foundations And Applications
3	PCC	230GCHD02	Modern Spectroscopic Techniques in Material Science
4	PCC	230GNED03	Smart Materials
5	MOOC / PCC	-	NPTEL Course
6	MOOC / PCC	-	NPTEL Course

*K.D. Diwate*

Dr. Kiran Dasharath Diwate  
School Ph.D. Coordinator

*[Signature]*

Dr. Anand Joshi  
Program Coordinator, Physics

*[Signature]*

Prof. Rajkumar Deshpande  
Dean, Faculty of Science and Technology

*[Signature]*  
Dr. Anjali Upadhye  
Director (RIIL)

*[Signature]*  
Dr. Anuradha S. Deshpande  
Associate Dean (Academics)

*[Signature]*  
Prof. B.B. Ahuja  
Vice Chancellor, JSPM University Pune



**Vice Chancellor**  
**JSPM University**  
**Pune**

EL-Experiential Learning  
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L-Lecture  
Format No.: JSPMUni/ACAD/001

T-Tutorial  
Rev. No.:0.0

P-Practical Session (Laboratory)  
Rev. Date:01/07/2024



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Date:

To,  
The Honorable Vice Chancellor,  
JSPM university Pune.

Subject: Details of newly added courses offered for PhD coursework of academic year 2025-26 for Batch V

Respected sir,

We propose to introduce the following course(s) in the current curriculum structure for the academic year 2025-26 for Batch V.

Name of Programme:

Semester: I

Sr. No.	Suggested Course		
	Course Code	Course Name	Credits
1	230GCHD02	Modern Spectroscopic Techniques in Material Science	3
2	250GPHM40	Radiation Physics	3



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The teaching and evaluation scheme for the suggested course is as follows.

OURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100/ 25 Marks)			END SEMESTER EXAMINATION (100 / 50/ 75 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PCC	230GCHD02	Modern Spectroscopic Techniques in Material Science	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	250GPHM40	Radiation Physics	3	-	-	-	30	30	40	100	-	-	-	-	100	3

We kindly request your approval for the proposed course.

Dr. Kiran D. Diwate  
Ph.D. coordinator

School of Basic and Applied Sciences

Dr. Anuradha S. Deshpande  
Dean Academics

Dr. R. S. Deshpande  
Dean, Faculty of Science and Technology



# JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF BASIC AND APPLIED SCIENCES

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

1.0 (NEP)

COURSE WORK - DOCTOR OF PHILOSOPHY (PHYSICS)

### SEMESTER I (LEVEL 8)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PCC	--	Domain Specific Course 1 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	--	Domain Specific Course 2 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PSMC	230GMAD01	Foundations of Mathematical Modelling and Statistical Techniques	3	-	-	-	30	30	40	100	-	-	-	-	100	3
RMC	231IRMD01	Research and Publication Ethics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
RMC	231IRMD02	Research Proposal Writing	2	-	-	-	-	-	-	-	-	-	50	50	50	2
RMC	231IRMD03	Writing Literature Review	2	-	-	-	-	-	-	-	-	-	50	50	50	2
SLC	231ISR01	Seminar	-	-	-	4	-	-	-	-	-	-	50	50	50	1
<b>TOTAL</b>			15	0	0	4									<b>500</b>	<b>16</b>

List of PCC/PEC

Sr. No.	Course Type	Course Code	Course Name
1	PCC	230GPHYD01	Complex Time Series Analysis
2	PCC	230GCSD01	Machine Learning And Deep Learning-Foundations And Applications
3	PCC	230GCHD02	Modern Spectroscopic Techniques in Material Science
4	PCC	230GNED03	Smart Materials
5	MOOC / PCC	-	NPTEL Course
6	MOOC / PCC	-	NPTEL Course

*K.D. Diwate*

Dr. Kiran Dasharath Diwate  
School Ph.D. Coordinator

*AN*

Dr. Anand Joshi  
Program Coordinator, Physics

*Rajkumar*

Prof. Rajkumar Deshpande  
Dean, Faculty of Science and Technology

*Anjali Upadhye*  
Dr. Anjali Upadhye  
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Dr. Anuradha S. Deshpande  
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L-Lecture  
Format No.: JSPMUni/ACAD/001

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Date: 16/03/2026

To,  
The Honorable Vice Chancellor,  
JSPM university Pune.

Subject: Details of newly added courses offered for PhD coursework of academic year 2025-26 for Batch VI

Respected sir,

We propose to introduce the following course(s) in the current curriculum structure for the academic year 2025-26 for Batch VI.

Name of Programme:

Semester: I

Sr. No.	Suggested Course		
	Course Code	Course Name	Credits
1	230GCHD02	Modern Spectroscopic Techniques in Material Science	3
2	230GCHD01	Advanced Materials for Hydrogen Generation	3



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The teaching and evaluation scheme for the suggested course is as follows.

OURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100/ 25 Marks)			END SEMESTER EXAMINATION (100 / 50/ 75 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PCC	230GCHD02	Modern Spectroscopic Techniques in Material Science	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	230GCHD01	Advanced Materials for Hydrogen Generation	3	-	-	-	30	30	40	100	-	-	-	-	100	3

We kindly request your approval for the proposed course.

Dr. Kiran D. Diwate

Ph.D. coordinator

School of Basic and Applied Sciences

Dr. Anuradha S. Deshpande

Dean Academics

Dr. R. S. Deshpande

Dean, Faculty of Science and Technology



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To,  
The Honorable Vice Chancellor,  
JSPM University Pune.

Subject: Details of NPETL courses offered in the even semester of AY 2025-26 for batch VI.

Respected sir,

In alignment with the National Education Policy 2020 and to enhance flexible learning, we propose to introduce the following course in the current curriculum structure with a equivalent MOOC/ NPTEL online certification course for the academic year 2025-26.

Name of Program: Ph.D. in Mathematics

Semester: I

Sr. No.	Suggested Domain Specific Course – 2/ MOOC/NPTEL			
	Course Code			
1	250GMAD08	Basics Real Analysis	Credits	MOOC Duration in Weeks
2	250GMAD09	Basic Calculus-I	3	12
3	250GMAD10	Scientific Computing using MATLAB	3	12
4	250GMAD11	Numerical Analysis	3	12
5	250GMAD12	Transform Techniques for Engineers	3	12
6	250GMAD13	Set Theory and Mathematical Logic	3	12
7	250GMAD14	Transform Calculus and its Applications in Differential Equations	3	12
8	250GMAD15	Linear Algebra	3	12
9	250GMAD16	Group Theory	3	12



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The teaching and evaluation scheme for the suggested NPTEL course is as follows

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (75 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (25 Marks)							
PCC	250GMAD08	Basics Real Analysis	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD09	Basic Calculus-I	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD10	Scientific Computing using MATLAB	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD11	Numerical Analysis	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD12	Transform Techniques for Engineers	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD13	Set theory and Mathematical Logic	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD14	Transform Calculus and its Applications in Differential Equations	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD15	Linear Algebra	3	-	-	-	-	-	25	75	-	-	-	-	100	3
PCC	250GMAD16	Group Theory	3	-	-	-	-	-	25	75	-	-	-	-	100	3

We kindly request your approval for the proposed courses.

Dr. M. G. Shrikan

Ph.D. coordinator

Department of Mathematics

Dr. G. A. Patil

Director, School of Computational Sciences

Dr. R. S. Deshpande

Dean, Faculty of Science and Technology

Dr. Anuradha S. Deshpande

Dean Academics