



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

M.Sc (Biotechnology)

(Effective from AY: 2025-26)



JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BASIC AND APPLIED SCIENCES

FIRST YEAR MASTER OF SCIENCE (BIOTECHNOLOGY)

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2025-2026

RELEASE DATE

1/07/2025

REVISION NO.

0.0 (NEP)

SEMESTER I (LEVEL 6.5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										TOTAL	CREDITS
			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)									
PSBC	250GBTM01_01	Principles of Bacteriology, Parasitology and Virology	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	250GBTM02_01	Advanced Biochemistry	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
	250GBTM03_01	Cell and Molecular Biology	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
	250GBTM04_01	Bioprocess Engineering and Technology	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5		
MMC	-	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2		
SEC	250GBTM05_01	Good Laboratory Practices in Biotechnology	2	-	2	-	-	-	-	-	50	50	50	50	100	3		
VSC (HSMC)	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	50	50	50	50	1.5		
AEC (HSMC)	231UENM01_01	Communicative English for Professionals	1	-	2	-	-	-	-	-	50	50	-	-	50	2		
RMC	230IRMM01_01	Research Methodology	2	-	-	-	30	30	40	50	-	-	-	-	50	2		
LC	250GBTM06_01	Advanced Biochemistry Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
	250GBTM07_01	Cell and Molecular Biology Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1		
TOTAL			16	-	10	4					50	50	-	-	50	1		
															750	22		



Multi-disciplinary Minor Course (MMC)						
I	Course Code	250HFGM08_01	250GCSM91_01	230GRAB91_01	230GCSM29_01	240VMGB01_01
	Course Name	Applied Forensic Biotechnology	Introduction to Programming in C	Basics of Robotics	Introduction to Artificial Intelligence	Current Trends in Marketing
II	Course Code	250HFGM09_02	250GCSM92_02	230GRAB94_02	230GCSM28_02	240VFMB01_02
	Course Name	Biomedical Instrumentation	Programming in C++	Industrial Robots	Introduction to Data Science	Current Trends in Finance

Pratiksha

Dr. Pratiksha Jadaun
Programme Coordinator (Biotechnology)

R. S. Deshpande

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

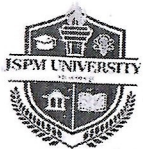
Anuradha S. Deshpande

Dr. Anuradha S. Deshpande
Associate Dean (Academics)



B. B. Ahuja

Prof. B. B. Ahuja
Vice Chancellor, JSPM University Pune



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0.0 (NEP)

FIRST YEAR MASTER OF SCIENCE (BIOTECHNOLOGY)

SEMESTER II (LEVEL 6.5)

TYPE	CODE	COURSE NAME	TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS	
			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)								
PSBC	250GBTM08_02	Bioinformatics and Biostatistics	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	250GBTM09_02	Genetic Engineering	3	-	-	-	30	30	40	100	-	-	-	-	100	3	
	250GBTM10_02	Advanced Immunology	2	-	-	2	30	30	40	100	-	-	-	-	100	3	
MMC	-	Multi-disciplinary Minor Course	1	-	2	-	-	-	-	100	-	-	-	-	100	2.5	
SEC	250GBTM11_02	Molecular Docking	2	-	2	-	-	-	-	-	50	50	50	50	100	2	
VSC	230IINB02_02	Innovation	1	-	-	2	-	-	-	-	50	50	50	50	100	3	
AEC (HSMC)	231UENM02_02	Business Communication	1	-	2	-	-	-	-	-	-	-	50	50	50	1.5	
RMC	230IRMM03_02	Research Data Analysis	2	-	-	-	-	-	-	-	50	50	-	-	50	2	
LC	250GBTM12_02	Advanced Immunology Lab	-	-	2	-	30	30	40	50	-	-	-	-	50	2	
HTP/FP/CEP	250GBTM13_02	Internship/Field Project/Community Engagement Program	4 to 6 weeks				-	-	-	-	-	50	50	-	-	50	1
TOTAL			15	-	8	4									750	22	

Note: A Postgraduate Diploma will be awarded if a student exits after first year. For "Exit" at the end of "First Year" the student must complete a total of 8 additional credits

a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 6 internship of minimum 4 weeks.

b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project).

Lecture
Format No.: JSPMUni/ACAD/001

T-Tutorial
Rev. No.:0.0

P-Practical Session (Laboratory)
Rev. Date:01/07/2025

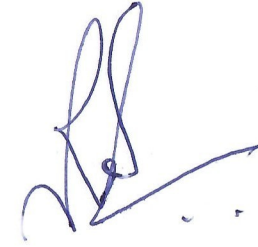
EL-Experiential Learning
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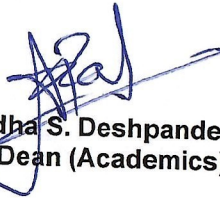
Sem.	Multi-disciplinary Minor Course (MMC)					
I	Course Code	250HFGM08_01	250GCSM91_01	230GRAB91_01	230GCSM29_01	240VMGB01_01
	Course Name	Applied Forensic Biotechnology	Introduction to Programming in C	Basics of Robotics	Introduction to Artificial Intelligence	Current Trends in Marketing
II	Course Code	250HFGM09_02	250GCSM92_02	230GRAB94_02	230GCSM28_02	240VFMB01_02
	Course Name	Biomedical Instrumentation	Programming in C++	Industrial Robots	Introduction to Data Science	Current Trends in Finance



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Programme Coordinator (Biotechnology)



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2026-2027

RELEASE DATE

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MASTER OF SCIENCE (BIOTECHNOLOGY)

REVISION NO.

0.0 (NEP)

SEMESTER III (LEVEL 7.0)

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)							
PEC	-	Program Elective Course -01 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	-	Program Elective Course -02 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
IOC	-	Interdisciplinary Open Course-01	2	-	-	-	30	30	40	100	-	-	-	-	100	2
	-	Interdisciplinary Open Course-02	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VEC	230USYB01	Behavioral Science and Ethics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PROJ	250GBTM14	Field Project	-	-	4	8	-	-	-	-	50	50	50	50	100	4
SLC	260GBTM15	Seminar	-	-	-	8	-	-	-	-	-	-	50	50	50	2
TOTAL			12	-	4	16									600	18
MLC#	-	Audit Course 1	1	-	-	-	-	-	-	50	-	-	-	-	50	1

SEM- III		Programme Elective Course (PEC)			
Specialization	Regenerative Medicine	Computational Biology	Industrial Biotechnology	Molecular Biotechnology	
PEC I	Course Code	260GBTM16	260GBTM17	260GBTM18	260GBTM19
	Course Name	Tissue Engineering	Bioinformatics Algorithms	Fermentation Technology	CRISPR-Cas Technology
PEC II	Course Code	260GBTM20	260GBTM21	260GBTM22	260GBTM23
	Course Name	Stem Cell Technology	Sequence Analysis	Microbial Biotechnology	Recombinant DNA Technology

Sem-III		Interdisciplinary Open Course (IOC)		
IOC I	Course Code	230GCSM32	231GCSB23	260GSFM50
	Course Name	Machine Learning in Practice	Fundamentals of Data Science	Food Science and Technology
IOC II	Course Code	230VBCB16	230GCSB151	230VMSM12
	Course Name	Financial Fraud	Artificial Intelligence for Everyone	Fundamentals of Human Resource Management

Course	Mandatory Learning Course (MLC#) Audit Course		
	Sem.	Semester-III	Semester-IV
		Course Code	250GBTM32
	Course Name	Scientific Ethics and Intellectual Property Rights	Introduction to Indian Constitution


Programme Coordinator
 (Biotechnology)


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SEMESTER IV (LEVEL 7.0)

COURSE

TEACHING
SCHEME

EXAMINATION SCHEME AND MARKS

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)		TOTAL	CREDITS	
			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)							
PEC	-	Program Elective Course -03 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
	-	Program Elective Course -04 / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PROJ	260GBTM24	Project / Internship with Project	-	-	12	24	30	30	40	-	200	200	100	100	300	12
TOTAL			6	-	12	24									500	18
MLC#	-	Audit Course 2	1	-	-	-	-	-	-	50	-	-	-	-	50	1

L-Lecture
Format No.: JSPMUni/ACAD/001

T-Tutorial
Rev. No.:0.0

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Rev. Date:01/07/2026


EL-Experiential Learning
Page 1 of 2

SEM-IV	Specialization	Programme Elective Course (PEC)			
PEC III	Course Code	260GBTM25	260GBTM26	260GBTM27	260GBTM28
	Course Name	Precision Medicine	Nanomedicine	Genomics and Proteomics	Environmental Biotechnology
PEC IV	Course Code	260GBTM29	260GBTM30	260GBTM31	260GBTM32
	Course Name	Drug Discovery	Nano Biosensors	Metabolomics	Sustainable Biotechnology

Course	Mandatory Learning Course (MLC*) Audit Course	
	Sem.	
	Semester-III	Semester-IV
	260GBTM33	230UPOB02
	Course Name	Course Name
	Scientific Ethics and Intellectual Property Rights	Introduction to Indian Constitution


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