



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

B.Sc (Chemistry)

(Effective from AY: 2024-25)



JSPM University Pune

FACULTY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BASIC AND APPLIED SCIENCES

FIRST YEAR BACHELOR OF SCIENCE
(CHEMISTRY)

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

0.0 (NEP)

SEMESTER I (LEVEL 4.5)

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)							
PCC	240GCHB03_01	Foundations of Chemistry	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	240GCHB04_01	Fundamentals of Organic Chemistry	3	-	-	-	30	30	40	100	-	-	-	-	100	3
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	3
SEC	240GCHB60_01	Python for Chemists	2	-	2	-	-	-	-	-	-	-	-	-	100	2
VSC	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	50	50	50	50	100	3
AEC (HSMC)	230UENB01_01	Effective Communication Skills	1	-	2	-	30	30	40	50	-	-	50	50	50	1.5
IKS	240UHIB01_01	Approaches to investigation and inquiry in early India	2	-	-	-	30	30	40	50	-	-	-	-	50	2
VEC/EEC (HSMC)	230GCEB03_01	Environmental Policy and Legislations	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	240GCHB05_01	Basic Inorganic and Organic Chemistry Lab	-	-	4	-	-	-	-	-	50	50	-	-	50	2
LLC	230UPYB02_01	Mindfulness and Wellbeing	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
TOTAL			17	0	8	4							50	-	700	22

L-Lecture

Format No.: JSPMUni/ACAD/001

T-Tutorial

Rev. No.:0.0


P-Practical Session (Laboratory)


Rev. Date:01/07/2024

EL-Experiential Learning

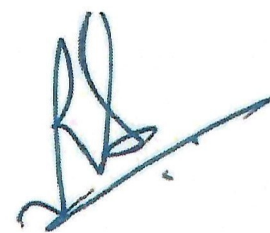
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Sem.	Interdisciplinary Open Course	
	Specialization	Physics
I	Course Code	240GPHB21_01
	Course Name	Solid State Physics
II	Course Code	240GPHB22_02
	Course Name	Physics of Nanomaterials
III	Course Code	240GPHB23_03
	Course Name	Photonics


Dr. Ganesh L. Agawane
 Programme Coordinator (Chemistry), SBAS


Dr. Anuradha S. Deshpande
 Associate Dean (Academics)




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


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



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SEMESTER II (LEVEL 4.5)

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)							
PCC	240GCHB06	Chemical Thermodynamics and Electrochemistry	3	-	-	2	30	30	40	100	-	-	-	-	100	3.5
PCC	240GCHB07	Principles of Analytical Chemistry and Chromatographic Techniques	2	-	-	-	30	30	40	100	-	-	-	-	50	2
MDM	-	Multi-Disciplinary Minor Course	3	-	-	-	30	30	40	100	-	-	-	-	100	3
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
SEC	240GCHB30	Cheminformatics	2	-	2	-	-	-	-	-	50	50	50	50	100	3
AEC (HSMC)	230UENB02_02	Communicative Proficiency Skills	1	-	2	-	30	30	40	50	-	-	-	-	50	2
VEC/EEC (HSMC)	230UPYB03_02	Ethics and Moral Values	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	240GCHB08	Basic Physical and Analytical Chemistry Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
LLC	231UPYB01_02	Yoga and Fitness	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5
IITP/FP/ CEP	240GCHB35	Internship/Field Project/Community Engagement Program	4 to 6 weeks				-	-	-	-	-	-	-	50	50	2
TOTAL			16	-	6	4									700	22

Note: A Certificate 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 2 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).

Sem.	Multi-Disciplinary Minor (MDM) Course				
	Specialization	Web Development	Biology	3D Printing	Forensic Science
II	Course Code	230GSCB101	240GBEB01_02	230GMEB86	230HFSB50_02
	Course Name	Internet and Networking	Biochemistry	Elements of Mechanical Engineering	Introduction to Crime Science
III	Course Code	230GSCB102	240GBEB02_03	230GMEB91	230HFSB51_03
	Course Name	Basics of HTML and CSS	Molecular Biology	Computer Aided Design (CAD)	Forensic Biological Sciences
	Course Code	230GSCB103	240GBEB03_03	230GMEB92	230HFSB52_03
	Course Name	Basics of HTML and CSS Lab	Molecular Biology Lab	Computer Aided Design (CAD) Lab	Forensic Biological Sciences Lab
IV	Course Code	230GSCB104	240GBEB04_04	230GRAB86	230HFSB53_04
	Course Name	Web Technology using PHP	Human Biological Sciences	3D Printing: Introduction & Processes	Forensic Chemical Sciences
	Course Code	230GSCB105	240GBEB05_04	230GRAB87	230HFSB54_04
	Course Name	Web Technology using PHP Lab	Human Biological Sciences Lab	3D Printing: Introduction & Processes Lab	Forensic Chemical Sciences Lab
	Course Code	230GSCB106	240GBEB06_05	230GRAB88	230HFSB55_05
V	Course Name	JAVA Frameworks for Web Development	Applied Biology	Application of 3D Printing	Forensic Physical Sciences
	Course Code	230GSCB107	240GBEB07_05	-	230HFSB56_05
	Course Name	JAVA Frameworks for Web Development Lab	Applied Biology Lab	-	Forensic Physical Sciences Lab
VI	Course Code	230GSCB108	240GBEB08_06	230GRAB89	230HFSB57_06
	Course Name	Adv Web Development Technologies	Bioinformatics and Biotechnology	Product Design and Development	Cyber Forensics
	Course Code	230GSCB109	240GBEB09_06	-	230HFSB58_06
	Course Name	Adv Web Development Technologies Lab	Bioinformatics and Biotechnology Lab	-	Cyber Forensics Lab

Sem.	Interdisciplinary Open Course	
	Specialization	Physics
I	Course Code	240GPHB21_01
	Course Name	Solid State Physics
II	Course Code	240GPHB22_02
	Course Name	Physics of Nanomaterials
III	Course Code	240GPHB23_03
	Course Name	Photonics

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Programme Coordinator (Chemistry), SBAS

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W. E. F

2025-2026

RELEASE DATE

01/07/2025

REVISION NO.

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SEMESTER III (LEVEL 5.0)

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)									
PCC	240GCHB09_03	Organic Functional Groups and Reactions	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	240GCHB10_03	Fundamentals of Coordination Chemistry and s-block Elements	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
PCC	240GCHB11_03	Chemical Kinetics and Phase Equilibria	3	-	-	-	30	30	40	100	-	-	-	-	100	3		
MDM	-	Multi-Disciplinary Minor	2	-	-	-	30	30	40	50					50	2		
IOC	-	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2		
VSC	230IINB02_03	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5		
AEC (HSMC)	230UENB03_03	Soft Skill Development	1	-	2	-	30	30	40	50	-	-	-	-	50	2		
LC	240GCHB12_03	Analytical and Preparative Chemistry Lab	-	-	4	-	-	-	-	-	50	50	-	-	50	2		
MDM	-	Multi-Disciplinary Minor Lab	-	-	2	4	-	-	-	-	50	50			50	2		
LLC	230HFSB80_03	Health and Nutrition	1	-	-	2	-	-	-	-	-	-	50	-	50	1.5		
TOTAL			16	0	8	8									700	22		

Sem.	Multi-Disciplinary Minor (MDM) Course				
	Specialization	Web Development	Biology	3D Printing	Forensic Science
II	Course Code	230GSCB101	240GBEB01_02	230GMEB86	230HFSB50_02
	Course Name	Internet and Networking	Biochemistry	Elements of Mechanical Engineering	Introduction to Crime Science
III	Course Code	230GSCB102	240GBEB02_03	230GMEB91	230HFSB51_03
	Course Name	Basics of HTML and CSS	Molecular Biology	Computer Aided Design (CAD)	Forensic Biological Sciences
	Course Code	230GSCB103	240GBEB03_03	230GMEB92	230HFSB52_03
	Course Name	Basics of HTML and CSS Lab	Molecular Biology Lab	Computer Aided Design (CAD) Lab	Forensic Biological Sciences Lab
IV	Course Code	230GSCB104	240GBEB04_04	230GRAB86	230HFSB53_04
	Course Name	Web Technology using PHP	Human Biological Sciences	3D Printing: Introduction & Processes	Forensic Chemical Sciences
	Course Code	230GSCB105	240GBEB05_04	230GRAB87	230HFSB54_04
	Course Name	Web Technology using PHP Lab	Human Biological Sciences Lab	3D Printing: Introduction & Processes Lab	Forensic Chemical Sciences Lab
V	Course Code	230GSCB106	240GBEB06_05	230GRAB88	230HFSB55_05
	Course Name	JAVA Frameworks for Web Development	Applied Biology	Application of 3D Printing	Forensic Physical Sciences
	Course Code	230GSCB107	240GBEB07_05	-	230HFSB56_05
	Course Name	JAVA Frameworks for Web Development Lab	Applied Biology Lab	-	Forensic Physical Sciences Lab
VI	Course Code	230GSCB108	240GBEB08_06	230GRAB89	230HFSB57_06
	Course Name	Adv Web Development Technologies	Bioinformatics and Biotechnology	Product Design and Development	Cyber Forensics
	Course Code	230GSCB109	240GBEB09_06	-	230HFSB58_06
	Course Name	Adv Web Development Technologies Lab	Bioinformatics and Biotechnology Lab	-	Cyber Forensics Lab

Sem.	Interdisciplinary Open Course	
	Specialization	Physics
I	Course Code	240GPHB21_01
	Course Name	Solid State Physics
II	Course Code	240GPHB22_02
	Course Name	Physics of Nanomaterials
III	Course Code	240GPHB23_03
	Course Name	Photonics


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2025-2026

RELEASE DATE

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SEMESTER IV (LEVEL 5.0)

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	E	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	240GCHB13_04	Organic Chemistry Transformations	3	-	-	2	30	30	40	100	-	-	-	-	100	3.5
PCC	240GCHB14_04	Molecular Structure and Spectroscopy	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PCC	240GCHB15_04	Coordination and Transition Metal Chemistry	2	-	-	-	30	30	40	100	-	-	-	-	100	2
MDM	-	Multi-Disciplinary Minor	2	-	-	-	30	30	40	50	-	-	-	-	50	2
SEC	240GCHB31_04	AIML in Chemistry	2	-	2	-	-	-	-	-	50	50	50	50	100	3
AEC (HSMC)	230UENB04_04	Verbal Aptitude Through Literature	1	-	2	-	30	30	40	50	-	-	-	-	50	2
LC	240GCHB16_04	Quantitative and Preparative Chemistry Lab.	-	-	2	-	-	-	-	-	50	50	-	-	50	1
MDM	-	Multi-Disciplinary Minor Lab.	-	-	2	4	-	-	-	-	50	50	-	-	50	2
LLC	240VBBB02_04	Theatre and Performing Arts	-	-	2	2	-	-	-	-	-	-	50	-	50	1.5
IITP/FP/CEP	240GCHB35_04	Internship/Field Project/Community Engagement Program	4 to 6 weeks				-	-	-	-	-	-	50	50	50	2
TOTAL			13	0	10	8									700	22
MLC#	-	Audit Course	1	-	-	-	-	-	-	50	-	-	-	-	50	1

Note: A Certificate 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 2 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).

Sem.	Multi-Disciplinary Minor (MDM) Course				
	Specialization	Web Development	Biology	3D Printing	Forensic Science
II	Course Code	230GSCB10_02	240GBEB01_02	230GMEB86_02	230HFSB50_02
	Course Name	Internet and Networking	Biochemistry	Elements of Mechanical Engineering	Introduction to Crime Science
III	Course Code	230GSCB102_03	240GBEB02_03	230GMEB91_03	230HFSB51_03
	Course Name	Basics of HTML and CSS	Molecular Biology	Computer Aided Design (CAD)	Forensic Biological Sciences
	Course Code	230GSCB103_03	240GBEB03_03	230GMEB92_03	230HFSB52_03
	Course Name	Basics of HTML and CSS Lab	Molecular Biology Lab	Computer Aided Design (CAD) Lab	Forensic Biological Sciences Lab
IV	Course Code	230GSCB104_04	240GBEB04_04	230GRAB86_04	230HFSB53_04
	Course Name	Web Technology using PHP	Human Biological Sciences	3D Printing: Introduction & Processes	Forensic Chemical Sciences
	Course Code	230GSCB105_04	240GBEB05_04	230GRAB87_04	230HFSB54_04
	Course Name	Web Technology using PHP Lab	Human Biological Sciences Lab	3D Printing: Introduction & Processes Lab	Forensic Chemical Sciences Lab
V	Course Code	230GSCB106_05	240GBEB06_05	230GRAB88_05	230HFSB55_05
	Course Name	JAVA Frameworks for Web Development	Applied Biology	Application of 3D Printing	Forensic Physical Sciences
	Course Code	230GSCB107_05	240GBEB07_05	-	230HFSB56_05
	Course Name	JAVA Frameworks for Web Development Lab	Applied Biology Lab	-	Forensic Physical Sciences Lab
VI	Course Code	230GSCB108_06	240GBEB08_06	230GRAB89_06	230HFSB57_06
	Course Name	Adv Web Development Technologies	Bioinformatics and Biotechnology	Product Design and Development	Cyber Forensics
	Course Code	230GSCB109_06	240GBEB09_06	-	230HFSB58_06
	Course Name	Adv Web Development Technologies Lab	Bioinformatics and Biotechnology Lab	-	Cyber Forensics Lab



Sem.	Mandatory Learning Course (MLC)*	
	Audit Course	
IV	Course Code	230UPOB02_04
	Course Name	Introduction to Indian Constitution
V	Course Code	250GCHB52_05
	Course Name	Chemical Safety and Risk Management
VI	Course Code	250GCHB53_06
	Course Name	Occupational Safety and Health


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