

# **Kurukshetra University, Kurukshetra**

(Established by the State Legislature Act-XII of 1956)

("A<sup>++</sup>" Grade, NAAC Accredited)



## **Scheme of Examination for**

### **Post Graduate Programme**

### **M.Sc. Biochemistry**

as per NEP 2020

**Curriculum and Credit Framework for Postgraduate Programme**

**With Multiple Entry-Exit, Internship and CBCS-LOCF**

**With effect from the session 2024-25 (in phased manner)**

DEPARTMENT OF BIOCHEMISTRY  
FACULTY OF LIFE SCIENCES

KURUKSHETRA UNIVERSITY, KURUKSHETRA -136119

HARYANA, INDIA

*Official*  
*Chairman*  
CHAIRMAN  
Department of Biochemistry  
Kurukshetra University  
KURUKSHETRA-136119

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## PROGRAM LEARNING OUTCOMES (PLOs)

PLOs	Master Degree in Biochemistry
	<b>After the completion of Master degree in Biochemistry the student will be able to:</b>
PLO-1: Knowledge and Understanding	Demonstrate the fundamental and advanced knowledge of the subject and understanding of recent developments and issues, including methods and techniques, related to the Biochemistry.
PLO-2: General Skills	Acquire the general skills required for performing and accomplishing the tasks as expected to be done by a skilled professional in the fields of Biochemistry.
PLO-3: Technical/ Professional Skills	Demonstrate the learning of advanced cognitive technical/professional skills required for completing the specialized tasks related to the profession and for conducting and analyzing the relevant research tasks indifferent domains of the Biochemistry.
PLO-4: Communication Skills	Effectively communicate the attained skills of the Biochemistry in well-structured and productive manner to the society at large.
PLO-5: Application of Knowledge and Skills	Apply the acquired knowledge and skills to the problems in the subject area, and to identify and analyze the issues where the attained knowledge and skills can be applied by carrying out research investigations to formulate evidence-based solutions to complex and unpredictable problems associated with the field of Biochemistry or otherwise.
PLO-6: Critical thinking and Research Aptitude	Attain the capability of critical thinking in intra/inter-disciplinary areas of the Biochemistry enabling to formulate, synthesize, and articulate issues for designing of research proposals, testing hypotheses, and drawing inferences based on the analysis.
PLO-7: Constitutional, Humanistic, Moral Values and Ethics	Know constitutional, humanistic, moral and ethical values, and intellectual property rights to become a scholar/professional with ingrained values in expanding knowledge for the society, and to avoid unethical practices such as fabrication, falsification or misrepresentation of data or committing plagiarism.
PLO-8: Capabilities/qualities and mindset	To exercise personal responsibility for the outputs of own work as well as of group/team and for managing complex and challenging work(s) that requires new/strategic approaches.
PLO-9: Employability and job-ready skills	Attain the knowledge and skills required for increasing employment potential, adapting to the future work and responding to the rapidly changing demands of the employers/industry/society with time.

  
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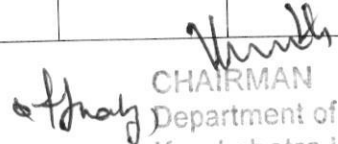
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Scheme of Examination for Postgraduate Programme M.Sc. Biochemistry  
as per NEP 2020 Curriculum and Credit Framework for Postgraduate Programmes  
(CBCS LOCF) with effect from the session 2024-25 (in phased manner)

## Framework-2 Scheme-P

Semester	Course Type	Course Code	Nomenclature of course	Theory(T)/ Practical (P)	Credits		Contact hours per week L: Lecture P: Practical T: Tutorial				Internal Assessment Marks	End Term Examination Marks	Total Marks	Examina tion hours
						Total	L	T	P	Total				
1	CC-1	M24-BCH-101	Structure and Function of Biomolecules	T	4	26	4	0	0	4	30	70	100	3
	CC-2	M24-BCH-102	Cell Biochemistry and Cell Signaling	T	4		4	0	0	4	30	70	100	3
	CC-3	M24-BCH-103	Bioenergetics and Metabolism -I	T	4		4	0	0	4	30	70	100	3
	CC-4	M24-BCH-104	Plant Biochemistry	T	4		4	0	0	4	30	70	100	3
	PC-1	M24-BCH-105	Practical-1 (Qualitative and quantitative analysis of Biomolecules)	P	4		0	0	8	8	30	70	100	4
	PC-2	M24-BCH-106	Practical-2 (Practicals of Basic Biochemistry and Plant Biochemistry)	P	4		0	0	8	8	30	70	100	4
	SEMINAR	M24-BCH-107	Seminar	S	2		0	0	0	2	0	50	50	1

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2	CC-5	M24-BCH-201	Metabolism -II	T	4	26	4	0	0	4	30	70	100	3
	CC-6	M24-BCH-202	Biochemical and biophysical techniques	T	4		4	0	0	4	30	70	100	3
	CC-7	M24-BCH-203	Enzymology	T	4		4	0	0	4	30	70	100	3
	CC-8	M24-BCH-204	Molecular Biology	T	4		4	0	0	4	30	70	100	3
	PC-3	M24-BCH-205	Practical-3 (Practical skills in Biotechniques)	P	4		0	0	8	8	30	70	100	4
	PC-4	M24-BCH-206	Practical-4 (Practicals based on Enzymology and Molecular Biology)	P	4		0	0	8	8	30	70	100	4
	CHM	M24-CHM-201	Constitutional, Human and Moral values, and IPR	T	2		2	0	0	2	15	35	50	3
	INTERNSHIP	M24-INT-200	AN INTERNSHIP COURSE OF 4 CREDITS OF 4-6 WEEKS DURATION DURING SUMMER VACATION AFTER IIND SEMESTER IS TO BE COMPLETED BY EVERY STUDENT. INTERNSHIP CAN BE EITHER FOR ENHANCING THE EMPLOYABILITY OR FOR DEVELOPING THE RESEARCH APTITUDE.									50	50	100
3	CC-9	M24-BCH-301	Immunology	T	4	26	4	0	0	4	30	70	100	3
	CC-10	M24-BCH-302	Genetic and Protein Engineering	T	4		4	0	0	4	30	70	100	3
	DEC-1 (either of two)	M24-BCH-303	Human Physiology	T	4		4	0	0	4	30	70	100	3
		M24-BCH-304	Molecular Genetics	T	4		4	0	0	4	30	70	100	3


	TC-2 (either of two)	M24-BCH-305	Nutritional Biochemistry	T	4	26	4	0	0	4	30	70	100	3
		M24-BCH-306	Developmental and Cancer Biology	T	4		4	0	0	4	30	70	100	3
PC-5	M24-BCH-307	Practical-5	P	4	0		0	8	8	30	70	100	4	
					0		0	8	8	30	70	100	4	
PC-6	M24-BCH-308	Practical-6	P	4	0		0	8	8	30	70	100	4	
OEC	FOR BIOCHEMISTRY STUDENTS				Courses to opted from the pool of OEC course other than the ones offered by Department of Biochemistry									
OEC: To be offered to the students of other departments	M24-OEC-302	Food Biochemistry	Open Elective	2	2	0	0	2	15	35	50	3		
4	CC-11	M24-BCH-401	Omics in Biology	T	4	4	0	0	4	30	70	100	3	
	CC-12	M24-BCH-402	Biotechniques and Bioinformatics	T	4	4	0	0	4	30	70	100	3	
	DEC-3 (either of two)	M24-BCH-403	Industrial Biochemistry	T	4	4	0	0	4	30	70	100	3	
		M24-BCH-404	Clinical Biochemistry	T	4	4	0	0	4	30	70	100	3	
	DEC-4 (either of two)	M24-BCH-405	Microbial Biochemistry	T	4	4	0	0	4	30	70	100	3	

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	M24-BCH-406	Pharmacovigilance	T	4		4	0	0	4	30	70	100	3
PC-7	M24-BCH-407	Practical-7	P	4		0	0	8	8	30	70	100	4
PC-8	M24-BCH-408	Practical-8	P	4		0	0	8	8	30	70	100	4
EEC	M24-EEC-409	Entrepreneurship skills in Biochemistry	T	2		2	0	0	2	15	35	50	3
<b>OR DISSERTATION</b>													
<b>(NOTE: IF A CANDIDATE IS OFFERED DISSERTATION COURSE, THEN HE/SHE WILL ALSO STUDY CC-11, DEC-3, DEC-4 &amp; EEC FROM ABOVE COURSES OF SEMESTER-4</b>													
Dissertation/ Project work	M24-BCH-410	Dissertation/ Project work	D	12	26	0	0	0	-	0	300	300	-
<b>TOTAL CREDITS</b>					<b>104</b>	<b>TOTAL MARKS</b>							<b>2700</b>

  
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