

Kurukshetra University, Kurukshetra

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

("A++" Grade, NAAC Accredited)




Scheme of Examination for Post Graduate Programme M.Sc. MICROBIOLOGY

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 MICROBIOLOGY
FACULTY OF LIFE SCIENCES

KURUKSHETRA UNIVERSITY, KURUKSHETRA -136119
HARYANA, INDIA


Chairman,
Department of Microbiology
Kurukshetra University,
KURUKSHETRA-136119.

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KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Postgraduate Programme Microbiology
as per NEP 2020 Curriculum and Credit Framework for Postgraduate Programme
(CBCS LOCF) with effect from the session 2024-25 (in phased manner)

Semester	Course Type	Course Code	Nomenclature of Course	Theory (T)/ Practical (P)	Credits		Contact hours per week				Internal Assessment Marks	End Term Examination Marks	Total Marks	Examination hours
					Total	L	S	P	Total					
1	CC-1	M24-MIC-101	Diversity of Prokaryotic & Eukaryotic microbes	T	4	26	4	0	0	4	30	70	100	3
	CC-2	M24-MIC-102	Microbial Genetics	T	4		4	0	0	4	30	70	100	3
	CC-3	M24-MIC-103	Microbial and analytical techniques	T	4		4	0	0	4	30	70	100	3
	CC-4	M24-MIC-104	Microbial biochemistry and metabolism	T	4		4	0	0	4	30	70	100	3
	PC-1	M24-MIC-105	Practical based on Papers M24-MIC-101 & M24-MIC-102	P	4		0	0	8	8	30	70	100	4
	PC-2	M24-MIC-106	Practical based on Papers M24-MIC-103 & M24-MIC-104	P	4		0	0	8	8	30	70	100	4
	SEMINAR	M24-MIC-107	Seminar	S	2		0	2	0	2	0	50	50	1
2	CC-5	M24-MIC-201	Recombinant DNA Technology	T	4	26	4	0	0	4	30	70	100	3
	CC-6	M24-MIC-202	Molecular Biology	T	4		4	0	0	4	30	70	100	3
	CC-7	M24-MIC-203	Medical Microbiology	T	4		4	0	0	4	30	70	100	3
	CC-8	M24-MIC-204	Biostatistics and computer for biologists	T	4		4	0	0	4	30	70	100	3
	PC-3	M24-MIC-205	Practical based on Papers M24-MIC-201 & M24-MIC-202	P	4		0	0	8	8	30	70	100	4

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PC-4	M24-MIC-206	Practical based on Papers M24-MIC-203 & M24-MIC-204	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	-
CC-9	M24-MIC-301	Microbial biotechnology & industrial microbiology-I	T	4	4	0	0	4	30	70	100	3
CC-10	M24-MIC-302	Immunology & Virology	T	4	4	0	0	4	30	70	100	3
DEC-1 Any one from M24-MIC-303/304/ MOOC course	M24-MIC-303	Environmental Microbiology	T	4	4	0	0	4	30	70	100	3
	M24-MIC-304	Food & Dairy Microbiology	T	4	4	0	0	4	30	70	100	3
OR A MOOC Course from Swayam Portal of Equal Credits					26	-	-	-	-	-	-	-
DEC-2 Any one from M24-MIC-305/306/ MOOC course	M24-MIC-305	Agriculture Microbiology	T	4	4	0	0	4	30	70	100	3
	M24-MIC-306	Microbial pathogenesis & Epidemiology	T	4	4	0	0	4	30	70	100	3
OR A MOOC Course from Swayam Portal of Equal Credits												
PC-5	M24-MIC-307	Practical based on Papers M24-MIC-301 & M24-MIC-302	P	4	0	0	8	8	30	70	100	4
PC-6	M24-MIC-308	Practical based on Papers M24-MIC-303/304 & M24-MIC-305 A/306	P	4	0	0	8	8	30	70	100	4
OEC	FOR MICROBIOLOGY STUDENTS							Course to be opted from the Pool of OEC course other than the ones offered by Microbiology Department				
OEC (To be offered to the students of other departments)	M24-OEC-332	General and Applied Microbiology	T	2	2	0	0	2	15	35	50	3

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CC-11	M24-MIC-401	Bioinformatics and Computational biology	T	4	26	4	0	0	4	30	70	100	3
CC-12	M24-MIC-402	Microbial biotechnology & industrial microbiology-II	T	4		4	0	0	4	30	70	100	3
DEC-3 Any one from M24-MIC-403/404/ MOOC course	M24-MIC-403	Microbial Genomics and Proteomics	T	4		4	0	0	4	30	70	100	3
	M24-MIC-404	Bioremediation and Waste Management	T	4		4	0	0	4	30	70	100	3
	OR A MOOC Course from Swayam Portal of Equal Credits												
DEC-4 Any one from M24-MIC-405/406/ MOOC course	M24-MIC-405	Bioentrepreneurship and IPR	T	4		4	0	0	4	30	70	100	3
	M24-MIC-406	Clinical and Pharmaceutical Microbiology	T	4		4	0	0	4	30	70	100	3
	OR A MOOC Course from Swayam Portal of Equal Credits												
PC-7	M24-MIC-407	Practical based on Papers M24-MIC-401 to M24-MIC-402	P	4		0	0	8	8	30	70	100	4
PC-8	M24-MIC-408	Practical based on Papers M24-MIC-403/404 to M24-MIC-405/406	P	4		0	0	8	8	30	70	100	4
EEC	M24-MIC-409	Entrepreneurship and employability in microbiology	T	2	2	0	0	2	15	35	50	3	

OR DISSERTATION*

(NOTE: IF A CANDIDATE IS OFFERED DISSERTATION COURSE, THEN HE/SHE WILL ALSO STUDY CC-11, DEC-3, DEC-4 & EEC FROM ABOVE COURSES OF SEMESTER 4)

CC-11	M24-MIC-401	Bioinformatics and Computational biology	T	4	4	0	0	4	30	70	100	3
DEC-3 Any one from M24-MIC-403/404/ MOOC course	M24-MIC-403	Microbial Genomics and Proteomics	T	4	4	0	0	4	30	70	100	3
	M24-MIC-404	Bioremediation and Waste Management	T	4	4	0	0	4	30	70	100	3
	OR A MOOC Course from Swayam Portal of Equal Credits											


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DEC-4 Any one from M24-MIC- 405/406/ MOOC course	M24- MIC- 405	Bioentrepreneurship and IPR	T	4		4	0	0	4	30	70	100	3
	M24- MIC- 406	Clinical and Pharmaceutical Microbiology	T	4		4	0	0	4	30	70	100	3
	OR A MOOC Course from Swayam Portal of Equal Credits												
EEC	M24- MIC- 409	Entrepreneurship and employability in microbiology	T	2		2	0	0	2	15	35	50	3
Dissertation / Project work	M24- MIC- 410	Dissertation/Project Work	D	12	26	0	0	0	-	0	300	300	
TOTAL CREDITS						108	TOTAL MARKS					2700	

*Staff Council of the department will decide and declare the number of seats for Dissertation work of 12 Credits in the 4th semester at the beginning of 2nd year depending upon the availability of infrastructure/ faculty and expertise in the area of specialization.


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Programme Learning Outcomes (PLOs) for M.Sc. Microbiology as per NEP-2020

PLOs	Master Degree in Microbiology
	After the completion of Master degree in Microbiology the student will be able to:
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 Microbiology .
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 Microbiology .
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 Microbiology .
PLO-4: Communication Skills	Effectively communicate the attained skills of the Microbiology 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 Microbiology or otherwise.
PLO-6: Critical thinking and Research Aptitude	Attain the capability of critical thinking in intra/inter-disciplinary areas of the Microbiology 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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