

### **Programme Objective:**

The M.Sc. Microbiology programme of JIS University aims to train students in such a way that they will learn the fundamental principles and its development in all sources and will be practitioners and leaders in their chosen field. The major objective is to produce professionals with leadership qualities and problem handling attitude. They will interact with their peers in other disciplines in their work place and society and contribute to the economic growth of the country and also pursue career in teaching or research.

### **Programme Outcome:**

Ability to carry out research independently in specialized area of Microbiology. Ability to write and present a technical report and demonstrate a degree of mastery in the area of microbiology to enable them in collaborative and multidisciplinary research. Prepare oneself to learn and apply appropriate techniques, resources, and modern instrumentation to solve complex biological activities with an understanding of the limitations. Demonstrate knowledge of microbiology and management principles and apply to manage projects efficiently and economically with intellectual integrity and ethics for sustainable development of society.

### **Minimum eligibility criteria:**

Candidates from Universities of West Bengal with B.Sc. (H) in relevant discipline are eligible. Candidates from other states should have a minimum of 50% marks in relevant discipline along with 45% marks in aggregate.

### **Process of admission:**

Based on the performance of JIS University online entrance test along with % of marks and the guidelines prescribed by the University.

# JIS University

## Curriculum for M.Sc. in Microbiology

### SEMESTER-I

Sl.No.	Course	Type	Paper Code	Title of the Paper	L	T	P	No. of Credits	No of Hrs./Week
1	CC1	Theoretical	PMI1001	Biomolecules and Biophysical Techniques	3	1	0	4	4
2	CC2	Theoretical	PMI1002	Enzymology and Metabolism	3	1	0	4	4
3	CC3	Theoretical	PMI1003	General Microbiology	3	1	0	4	4
4	CC4	Practical	PMI1101	Instrumentation Lab	0	0	2	2	3
5	CC5	Practical	PMI1102	Biomolecules & Enzymology Lab	0	0	2	2	3
6	CC6	Practical	PMI1103	General Microbiology Lab	0	0	2	2	3
7	CBCS	Theoretical		CBCS-I	3	1	0	4	4
<b>Total</b>								<b>22</b>	<b>25</b>
<b>NON-CGPA</b>									
8	EXTRA CC		PMI1501	Seminar	0	0	1	1	1
9	EXTRA CC		PMI1502	SkillX	0	0	1	1	-
<b>TOTAL</b>								<b>23</b>	<b>26</b>

## SEMESTER-II

Sl.No.	Course	Type	Paper Code	Title of the Paper	L	T	P	No. of Credits	No of Hrs./Week
1	CC7	Theoretical	PMI2001	Immunology	3	1	0	4	4
2	CC8	Theoretical	PMI2002	Molecular Biology and Genome Studies	3	1	0	4	4
3	CC9	Theoretical	PMI2003	Microbial physiology and Metabolism	3	1	0	4	4
4	CC10	Practical	PMI2101	Immunology Lab	0	0	2	2	3
5	CC11	Practical	PMI2102	Microbial Molecular Biology and Genetics Lab	0	0	2	2	3
6	CC12	Practical	PMI2001	Microbial physiology and Metabolism Lab	0	0	2	2	3
7	CBCS	Theoretical		CBCS-II	3	1	0	4	4
<b>Total</b>								<b>22</b>	<b>25</b>
<b>NON-CGPA</b>									
8	EXTRA CC		MSD-281	Seminar	0	0	1	1	1
9	EXTRA CC		MSD-282	SkillX	0	0	1	1	-
<b>TOTAL</b>								<b>24</b>	<b>26</b>

### SEMESTER-III

Sl.No.	Course	Type	Paper Code	Title of the Paper	L	T	P	No. of Credits	No of Hrs./Week
1	CC13	Theoretical	MMB-301	Recombinant DNA Technology	3	0	1	4	5
2	CC14	Theoretical	MMB-302	Medical Microbiology	3	1	0	4	4
3	CC15	Theoretical	MMB-303	Bioinformatics	2	0	2	4	5
4	Elective 1	Theoretical	MMB-304	Cell Biology and Molecular Signalling/ Host Pathogen Interaction	3	1	0	4	4
5	CC16	Project	MMB-391	Review work	0	0	2	2	3
<b>Total</b>								<b>18</b>	<b>21</b>
<b>NON-CGPA</b>									
8	EXTRA CC		MSD-381	Seminar	0	0	1	1	1
9	EXTRA CC		MSD-382	SkillX	0	0	1	1	-
<b>TOTAL</b>								<b>20</b>	<b>22</b>

## SEMESTER-IV

Sl.No.	Course	Type	Paper Code	Title of the Paper	L	T	P	No. of Credits	No of Hrs./Week
1	CC17	Project Dissertation and Viva	MMB-491	Project Dissertation and Viva	0	0	4	4	8
2	CC18	Theoretical	MMB-401	Virology	3	1	0	4	4
3	CC19	Theoretical	MMB-402	Environmental and Agricultural Microbiology	3	1	0	4	4
4	Elective 2	Theoretical	MMB-403	Metabolic Engineering/ Nanobiotechnology	3	1	0	4	4
5	CC20	Industry Visit	MMB-492	Industry Visit	0	0	2	2	-
<b>Total</b>								<b>18</b>	<b>20</b>
<b>NON-CGPA</b>									
8	EXTRA CC		MSD-481	Seminar	0	0	1	1	1
9	EXTRA CC		MSD-482	SkillX	0	0	1	1	-
<b>TOTAL</b>								<b>20</b>	<b>21</b>