



**PERIYAR MANIAMMAI INSTITUTE OF  
SCIENCE & TECHNOLOGY**  
**Periyar Nagar, Vallam, Thanjavur - 613403**  
**Tamil Nadu, India.**

**Faculty of Science and Humanities**

**DEPARTMENT OF BIOTECHNOLOGY**

**M.Sc Biotechnology**

**Curriculum (Semesters I to IV)**

**Regulations 2024**

**PERIYAR MANIAMMAI INSTITUTE OF SCIENCE & TECHNOLOGY**  
**FACULTY OF SCIENCE AND HUMANITIES**  
**DEPARTMENT OF BIOTECHNOLOGY**  
**M.Sc. BIOTECHNOLOGY**  
**CURRICULUM – REGULATIONS 2024**

The category of courses and minimum credit requirements according to the UGC Guidelines on Curriculum and Credit Framework for Postgraduate (PG) degree programmes is outlined below:

<b>Sl. No.</b>	<b>Course Category</b>	<b>Credit Required</b>
1.	Foundation Courses	04
2.	Programme Core Courses	47
3.	Programme Elective Courses	12
4.	Online Courses	03
5.	Employability Enhancement Courses (Internship / Field Visit / Professional Practices / Project/ Research / Thesis / Dissertation)	17
6.	Value Added / Value Addition Courses (IKS, Community Engagement, Research Methodology)	07
<b>Total</b>		<b>90</b>

**SEMESTER I**

Sl.No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	P24BY101	Cellular and Molecular Biology	3	1	0	4
2	P24BY102	Microbiology	3	0	0	3
3	P24BY103	Biochemistry	3	0	0	3
4	P24BY104	Entrepreneurship Towards Sustainable Development Goals	2	0	0	2
5	P24BY9XX	Programme Elective – I	3	0	0	3
6	P24VA009	Ancient Indian Medicinal System	3	0	0	3
<b>Practical</b>						
7	P24BY105	Advanced Microbiology Laboratory	0	0	2	1
8	P24BY106	Advanced Biochemistry Laboratory	0	0	4	2
9	P24BY107	Advanced Cellular and Molecular Biology Laboratory	0	0	2	1
<b>Total</b>			<b>17</b>	<b>1</b>	<b>8</b>	<b>22</b>

**SEMESTER II**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	P24BY151	Recombinant DNA Technology	3	1	0	4
2	P24BY152	Immunotechniques	3	1	0	4
3	P24BY153	Food Processing Technology	3	0	0	3
4	P24BY9XX	Programme Elective - II	3	0	0	3
5	P24RD001	Research Methodology	3	0	0	3
<b>Practical</b>						
6	P24BY154	Food Processing Technology Laboratory	0	0	2	1
7	P24BY155	Recombinant DNA Technology and Immunology Laboratory	0	0	4	2
<b>Internship / Field Visit</b>						
8	P24VA002	Community Engagement and Social Responsibility	1	0	2	2
<b>Total</b>			<b>16</b>	<b>2</b>	<b>8</b>	<b>22</b>

**SEMESTER III**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>			
			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Theory</b>						
1	P24BY201	Bioprocess Technology	3	1	0	4
2	P24BY202	Computational Biology	3	1	0	4
3	P24BY203	Enzymology	3	1	0	4
4	P24BY9XX	Programme Elective - III	3	0	0	3
<b>Practical</b>						
5	P24BY204	Upstream Processing Laboratory	0	0	4	2
6	P24BY205	Computational Biology Laboratory	0	0	2	1
<b>Project Work</b>						
7	P24EM201	Project Phase I	0	0	10	5
<b>Total</b>			<b>12</b>	<b>3</b>	<b>16</b>	<b>23</b>

**SEMESTER IV**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	P24BY9XX	Programme Elective - IV	3	0	0	3
2	P24BY8XX	Online Course	3	0	0	3
3	P24VA001	Cyber Security	2	0	0	2
<b>Practical</b>						
4	P24BY251	Downstream Processing Laboratory	0	0	6	3
<b>Project Work</b>						
5	P24EM251	Project Phase II	0	0	24	12
<b>Total</b>			<b>8</b>	<b>0</b>	<b>30</b>	<b>23</b>

The number of credits in each semester is summarized as follows:

Course	I	II	III	IV
M.Sc. Biotechnology	22	22	23	23

**Semester Wise Credit Distribution (in all categories of courses)**

<b>Sl. No.</b>	<b>Course Category</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>Credits</b>
1.	Foundation Courses	04	-	-	-	04
2.	Programme Core Courses	12	17	15	03	47
3.	Programme for Elective Courses	03	03	03	03	12
4.	Online Courses / Open Elective Courses	-	-	-	03	03
5.	Employability Enhancement Courses	-	-	05	12	17
6.	Value Added / Value Addition Courses	03	02	-	02	07
<b>Total</b>		<b>22</b>	<b>22</b>	<b>23</b>	<b>23</b>	<b>90</b>

**Suggested List of Professional Elective Courses****Professional Elective - I**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>			
			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	P24BY901	Nanobiotechnology	3	0	0	3
2	P24BY902	Molecular Genetics	3	0	0	3
3	P24BY903	Bioanalytical Techniques	3	0	0	3

**Professional Elective – II**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24BY951	Plant and Animal Biotechnology	3	0	0	3
2	P24BY952	Pharmaceutical Biotechnology	3	0	0	3
3	P24BY953	Stem Cell Biology and Tissue Engineering	3	0	0	3

**Professional Elective - III**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24BY904	Biostatistics	3	0	0	3
2	P24BY905	Agricultural Biotechnology	3	0	0	3
3	P24BY906	Medical Biotechnology and Drug Design	3	0	0	3

**Professional Elective - IV**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24BY954	Microbial Biotechnology	3	0	0	3
2	P24BY955	Regulatory Affairs and Industrial Standards	3	0	0	3
3	P24BY956	Environmental Biotechnology	3	0	0	3