

# **STRUCTURE OF THE SYLLABUS FOR 4 YEAR UG PROGRAMME**

## **ROYAL SCHOOL OF BIO SCIENCES**

### **B.Sc. Microbiology (Honours/Honours with Research)**

<b>1<sup>st</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M101	Fundamentals of Microbiology	3
Major (Core)	MIB152M112	Practical on Fundamental Microbiology	3
Minor	MIB152N101	Introduction and Scope of Microbiology	3
Interdisciplinary (IDC)	IKS992IK01	Indian Knowledge System-1	3
Ability Enhancement course (AEC-1)	CEN982A101	Communicative English-1	1
AEC-2	BHS982A102	Behavioural Science-1	1
Skill Enhancement Course (SEC)	MIB152S111	Microbial Quality Control in Water and Food	3
Value Added Course (VAC)	VAC-1	VAC- (To choose from a pool of courses)	3
*MOOCs	MOOCs 1	*MOOCs/online course will be identified by the dept. from the list of courses available on the MOOC online platform/SWAYAM portal	3
<b>TOTAL CREDIT FOR 1<sup>st</sup> SEMESTER</b>			<b>23</b>
<b>2<sup>nd</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M201	Bacteriology	3
Major (Core)	MIB152M212	Practical on Bacteriology	3
Minor	MIB152N201	Introductory Virology	3
IDC	IKS992K201	Indian Knowledge System-2	3
AEC-1	CEN982A201	Communicative English-2	1
AEC-2	BHS982A202	Behavioural Science-2	1
SEC	MIB152S211	Fermentation Technology and Application	3

VAC	VAC-2	VAC- (To choose from a pool of courses)	3
*MOOCs	MOOCs 1	*MOOCs/online course will be identified by the dept. from the list of courses available on the MOOC online platform/SWAYAM portal	3
<b>TOTAL CREDIT FOR 2<sup>nd</sup> SEMESTER</b>			23
<b>3<sup>rd</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M301	Biochemistry	3
Major (Core)	MIB152M302	Cell Biology	3
Major (Core)	MIB152M313	Practical on Biochemistry	1
Major (Core)	MIB152M314	Practical on cell Biology	1
Minor	MIB152N301	Plant Pathology and plant-microbe interaction	4
IDC	IKS992K301	Indian Knowledge System-3	3
AEC-1	CEN982A301	Communicative English-3	1
AEC-2	BHS982A302	Behavioural Science-3	1
SEC	MIB152S311	Biofertilizer and Biopesticide	3
*MOOCs	MOOCs 1	*MOOCs/online course will be identified by the dept. from the list of courses available on the MOOC online platform/SWAYAM portal	3
<b>TOTAL CREDIT FOR 3<sup>rd</sup> SEMESTER</b>			23
<b>4<sup>th</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M401	Immunology	4
Major (Core)	MIB152M402	Microbial Genetics	4
Major (Core)	MIB152M413	Practical on Immunology and Microbial Genetics	4
Minor-1	MIB152N401	Biosafety and Intellectual property rights	3
Minor-2	MIB152N402	Microbial Biotechnology	3
AEC-1	CEN982A401	Communicative English-IV	1

AEC--2	BHS982A402	Behavioural Science-IV	1
*MOOCs	MOOCs 1	*MOOCs/online course will be identified by the dept. from the list of courses available on the MOOC online platform/SWAYAM portal	3
<b>TOTAL CREDIT FOR 4<sup>th</sup> SEMESTER</b>			23
<b>5<sup>th</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M501	Molecular Biology	4
Major (Core)	MIB152M502	Phycology Mycology and Virology	4
Major (Core)	MIB152M513	Practical on Molecular Biology	2
Major (Core)	MIB152M514	Practical on Phycology Mycology and Virology	2
Minor	MIB152N501	Medical Microbiology	4
Internship	MIB152M525	Internship	4
<b>TOTAL CREDIT FOR 5<sup>th</sup> SEMESTER</b>			20
<b>6<sup>th</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M601	Genetic engineering	4
Major (Core)	MIB152M602	Pharmaceutical Microbiology	4
Major (Core)	MIB152M603	Inheritance Biology	4
Major (Core)	MIB152M614	Practical on Genetic Engineering	4
Minor	MIB152N601	Food Microbiology	4
<b>TOTAL CREDIT FOR 6<sup>th</sup> SEMESTER</b>			20
<b>7<sup>th</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M701	Industrial and food Microbiology	4
Major (Core)	MIB152M702	Environmental and Agricultural Microbiology	4
Major (Core)	MIB152M703	Microbial Physiology & Metabolism	4
Major (Core)	MIB152M714	Practical on Food and Environmental Microbiology	4
Minor	MIB152N701	Environmental Microbiology	4
<b>TOTAL CREDIT FOR 7<sup>th</sup> SEMESTER</b>			20

<b>8<sup>th</sup> SEMESTER</b>			
<b>COMPONENT</b>	<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
Major (Core)	MIB152M801	Research Methodology and Scientific Writing	4
Minor	MIB152N801	Agriculture Microbiology	4
Project / Dissertation	MIB152M821	Dissertation	12
Advanced Microbiology course to be taken in lieu of Dissertation/Research Project	MIB152M802	Microbial enzyme: Current trend in industry and healthcare	4
	MIB152M803	Parasitology, Medical and Veterinary Microbiology	4
	MIB152M804	Microbiome's role in human and plants health	4
<b>TOTAL CREDIT FOR 8<sup>th</sup> SEMESTER</b>			<b>20</b>

# **STRUCTURE OF THE SYLLABUS FOR 2 YEAR UG PROGRAMME**

## **ROYAL SCHOOL OF BIO SCIENCES**

### **M.Sc. Microbiology**

<b>1<sup>st</sup> SEMESTER</b>		
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
MIB154C101	General Microbiology	4
MIB154C102	Mycology, Phycology and Virology	4
MIB154C103	Microbial genetics	4
MIB154C104	Microbial Biochemistry	4
MIB154C115	Practical on General Microbiology, Mycology, Phycology and Virology	2
MIB154C116	Practical on Microbial Biochemistry and Microbial Genetics	2
MOOCs 1	*MOOCs/online course will be identified by the dept. from the list of courses available on the MOOC online platform/SWAYAM portal	4
<b>TOTAL CREDIT FOR 1<sup>st</sup> SEMESTER</b>		<b>24</b>
<b>2<sup>nd</sup> SEMESTER</b>		
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
MIB154C201	Immunology	4
MIB154C202	Molecular Biology and recombinant DNA technology	4
MIB154C203	Parasitology, Medical and Veterinary Microbiology	4
MIB154C204	Food Microbiology	4
MIB154C215	Practical on Immunology & Molecular Biology	2
MIB154C216	Practical on Medical and Food Microbiology	2
MOOCs 1	*MOOCs/online course will be identified by the dept. from the list of courses available on the MOOC online platform/SWAYAM portal	4
<b>TOTAL CREDIT FOR 2<sup>nd</sup> SEMESTER</b>		<b>24</b>
<b>TOTAL CREDIT FOR 1<sup>st</sup> YEAR = 48</b>		
<b>3<sup>rd</sup> SEMESTER</b>		
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
MIB154C301	Microbial Genomics, Proteomics & Bioinformatics	4
MIB154C302	Applied Microbiology & Enzyme technology	4
MIB154C303	Inheritance Biology	4
MIB154C304	Microbial fermentation technology	4
MIB154C325	RESEARCH PROJECT	8
<b>TOTAL CREDIT FOR 3<sup>rd</sup> SEMESTER</b>		<b>24</b>
<b>OR 3<sup>rd</sup> SEMESTER (For students with 3<sup>rd</sup> and 4<sup>th</sup> Semester Research)</b>		
MIB154C321	Dissertation – I	20

<b>4<sup>th</sup> SEMESTER</b>		
<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>CREDIT</b>
MIB154C401	Soil and Environmental Microbiology	4
MIB154C402	Bioinstrumentation and biotechniques	4
MIB154C403	Biosafety and IPR	4
MIB154C424	RESEARCH PROJECT	12
<b>OR 4<sup>th</sup> SEMESTER</b> <b>(For students with 3<sup>rd</sup> and 4<sup>th</sup> Semester Research)</b>		
MIB154C421	Dissertation – II	<b>24</b>
<b>TOTAL CREDIT FOR 2<sup>nd</sup> YEAR = 48</b>		