

**Proposed outline of the syllabus for M.Sc. in Biotechnology (As per NEP 2020)**  
**Royal School of Bio-Sciences**

1 <sup>ST</sup> SEMESTER				
COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
BTC154C101	Biochemistry	400	3	3-0-0
BTC154C102	Microbiology	400	3	3-0-0
BTC154C103	Cell Biology	400	3	3-0-0
BTC154C104	Genetics	400	3	3-0-0
BTC154C115	Practical – I (A)	400	4	0-0-8
BTC154C116	Practical – I (B)	400	4	0-0-8
SWAYAM			3/ 4	
TOTAL CREDIT FOR 1 <sup>ST</sup> SEMESTER			20+3/4	
2 <sup>ND</sup> SEMESTER				
COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
BTC154C201	Molecular Biology	500	3	3-0-0
BTC154C202	Immunology	500	3	3-0-0
BTC154C203	Bioinformatics and Biostatistics	500	3	3-0-0
BTC154C204	Environmental Biotechnology	500	3	3-0-0
BTC154C215	Practical – II (A)	500	4	0-0-8
BTC154C216	Practical – II (B)	500	4	0-0-8
SWAYAM			3/ 4	
TOTAL CREDIT FOR 2 <sup>ND</sup> SEMESTER			20+3/4	
TOTAL CREDIT FOR 1 <sup>ST</sup> YEAR = 40 + 6/ 8				
3 <sup>RD</sup> SEMESTER				
COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
BTC154C301	Bioprocess Technology	500	4	4-0-0
BTC154C302	Analytical techniques	500	4	4-0-0
BTC154C303	IPR, Biosafety, Bioethics and Research Methodology	500	4	4-0-0
BTC154C304	Genetic Engineering	500	4	4-0-0
BTC154C315	Practical – III	500	4	0-0-8
TOTAL CREDIT 3 <sup>RD</sup> SEMESTER			20	
OR 3 <sup>RD</sup> SEMESTER (For students with 3 <sup>rd</sup> and 4 <sup>th</sup> Semester Research)				
BTC154R321	RESEARCH PROJECT – PHASE 1	500	20	0-0-40
4 <sup>TH</sup> SEMESTER				
COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
BTC154C421	Dissertation (Students with research in 4 <sup>th</sup> Sem)	500	20	0-0-40
(for 'Coursework only' students, in lieu of dissertation)				
BTC154C401	Plant and Animal Biotechnology	500	4	4-0-0
BTC154C402	Biophysical Chemistry	500	4	4-0-0
BTC154C403	Genomics and Proteomics	500	4	4-0-0
BTC154C404	Food Biotechnology	500	4	4-0-0
BTC154C415	Practical – IV	500	4	0-0-8
TOTAL CREDIT 4 <sup>TH</sup> SEMESTER			20	
OR 4 <sup>TH</sup> SEMESTER (For students with 3 <sup>rd</sup> and 4 <sup>th</sup> Semester Research)				
BTC154R421	RESEARCH PROJECT – PHASE 2	500	20	
TOTAL CREDIT FOR 2 <sup>ND</sup> YEAR = 40				

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<b>Programme wise courses for each semester</b>				
<b>Programme</b>	<b>Semester</b>	<b>Mandatory Course codes</b>	<b>Level</b>	<b>Credits</b>
<b>Coursework only</b>	1 <sup>st</sup>	All courses	400	20 + 3/ 4
	2 <sup>nd</sup>	All courses	500	20 + 3/ 4
	3 <sup>rd</sup>	BTC154C301, C302, C303, C304, C315	500	20
	4 <sup>th</sup>	BTC154C401, C402, C403, C404, C415	500	20
<b>Coursework till 3<sup>rd</sup> Semester and Research in the 4<sup>th</sup> Semester</b>	1 <sup>st</sup>	All courses	400	20 + 3/ 4
	2 <sup>nd</sup>	All courses	500	20 + 3/ 4
	3 <sup>rd</sup>	BTC154C301, C302, C303, C304, C315	500	20
	4 <sup>th</sup>	BTC154C421	500	20
<b>Coursework (1<sup>st</sup> and 2<sup>nd</sup> semester) + Research only (3<sup>rd</sup> and 4<sup>th</sup> semester)</b>	1 <sup>st</sup>	All courses	400	20 + 3/ 4
	2 <sup>nd</sup>	All courses	500	20 + 3/ 4
	3 <sup>rd</sup>	BTC154R321	500	20
	4 <sup>th</sup>	BTC154R421	500	20
<b>Total Credits</b>				<b>80 + 6/ 8</b>