



# SEETHALAKSHMI RAMASWAMI COLLEGE

(Autonomous)

Affiliated to Bharathidasan University

Tiruchirappalli

Accredited with A+ by NAAC (4<sup>th</sup> Cycle)



**B.Sc., Biotechnology**

**Revised CBCS - OBE - BASED Curriculum Structure**

(For students admitted from 2021 onwards)

SEM	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	TOTAL
<b>I</b>	Language I	U211XXLT01/S01/H01	Course I	6	3	EXT	25	75	100
	English I	U211XXEE01	Course I	6	3	EXT	25	75	100
	Core Course I	U211BTMT01	Cell Biology	7	5	EXT	25	75	100
	Core Practical I		Practical I-Cell and Molecular Biology	2	-	INT	-	-	-
	First Allied Course I	U211BTAT01	Microbiology	4	3	EXT	25	75	100
	First Allied Practical I		Practical I - Microbiology and Immunology	2	-	INT	-	-	-
	CD (Biotechnology & Biochemistry)		Stem Cell Biology	1	-	EXT	-	-	-
	VBE	U211XXE01	Value Based Education	2	2	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>16</b>				<b>500</b>
<b>II</b>	Language II	U212XXLT02/S02/H02	Course II	6	3	EXT	25	75	100
	English II	U212XXEE02	Course II	6	3	EXT	25	75	100
	Core Course II	U212BTMT02	Molecular Biology	5	5	EXT	25	75	100
	Core Practical I	U212BTMP01	Practical I- Cell and Molecular Biology	2	4	INT	40	60	100
	First Allied Course II	U212BTAT02	Immunology	4	3	EXT	25	75	100
	First Allied Practical I	U214BCAP01	Practical I- Microbiology and Immunology	2	3	INT	40	60	100
	CD (Biotechnology & Biochemistry)	U212XAMT01	Stem Cell Biology	3	4	EXT	25	75	100
	EVS	U212XXES01	Environmental Studies	2	2	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>27</b>				<b>800</b>

<b>III</b>	Language III	U213XXLT03/S03/H03	Course III	6	3	EXT	25	75	100
	English III	U213XXEE03	Course III	6	3	EXT	25	75	100
	Core Course III	U213BTMT03	Genetics	6	5	EXT	25	75	100
	Core Practical II		Practical II -Genetics and Genetic Engineering	2	-	INT	-	-	-
	Second Allied Course I	U213BTAT03	Offered by the Department of Biochemistry	4	3	EXT	25	75	100
	Second Allied Practical II		Practical II- Analysis of Biomolecules	2	-	INT	-	-	-
	NME – I *	U213BTNE01	Biotechnology for Human Welfare	2	2	INT	25	75	100
	SBE - I	U213BTSE01:1	Bioinstrumentation	2	2	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>18</b>				<b>600</b>
<b>IV</b>	Language IV	U214XXLT04/S04/H04	Course IV	6	3	EXT	25	75	100
	English IV	U214XXEE04	Course IV	6	3	EXT	25	75	100
	Core Course IV	U214BTMT04	Genetic Engineering	6	5	EXT	25	75	100
	Core Practical II	U214BTMP02	Practical II -Genetics and Genetic Engineering	2	4	INT	40	60	100
	Second Allied Course II	U214BTAT04	Offered by the Department of Biochemistry	4	3	EXT	25	75	100
	Second Allied Practical II	U214BCAP02	Practical II –Analysis of Biomolecules	2	3	INT	40	60	100
	NME -II *	U214BTNE02	Biotechnology and Environment	2	2	INT	25	75	100
	SBE -II	U214BTSE02:1	Plant Tissue Culture	2	2	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>25</b>				<b>800</b>

*\*Offered by the Department to the students of other disciplines*

<b>V</b>	Core Course V	U215BTMT05	Enzyme and Enzyme Technology	6	5	EXT	25	75	100
	Core Course VI	U215BTMT06	Plant Biotechnology	6	5	EXT	25	75	100
	Core Course VII	U215BTMT07	Animal Biotechnology	6	5	EXT	25	75	100
	Core Practical III		Practical III - Enzymology, Plant and Animal Biotechnology	3	-	INT	-	-	-
	MBE- I	U215BTME01:1	Biostatistics	5	4	EXT	25	75	100
	SBE- III	U215BTSE03:1	Molecular Modeling and Drug Designing	2	2	INT	25	75	100
	SSD	U215XXSS01	Soft Skill Development	2	2	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>23</b>				<b>600</b>
<b>VI</b>	Core Course VIII	U216BTMT08	Pharmaceutical Biotechnology	5	5	EXT	25	75	100
	Core Course IX	U216BTMT09	Environmental Biotechnology	5	5	EXT	25	75	100
	Core Practical III	U216BTMP03	Practical III- Enzymology, Plant and Animal Biotechnology	2	4	INT	40	60	100
	Core Practical IV	U215BTMP04	Practical IV - Pharmaceutical and Environmental Biotechnology	4	4	INT	40	60	100
	MBE- II	U216BTME02:1	Fermentation Technology	5	4	EXT	25	75	100
	MBE- III	U216BTME03:1	Basic Bioinformatics	5	4	EXT	25	75	100
	Group Project	U216BTPJ01	Validation on Industrial visit	3	3	INT	-	-	100
	GS	U216XXGS01	Gender Studies	1	1	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>30</b>				<b>800</b>
	Extension		Extension Activity	-	1	INT	25	75	100
<b>TOTAL</b>				<b>30</b>	<b>31</b>				<b>900</b>
<b>GRAND TOTAL</b>				<b>180</b>	<b>140</b>				<b>4200</b>

### MAJOR BASED ELECTIVES

S. NO.	SEMESTER	GROUP	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	TOTAL
1	SEMESTER V	Group – I (Choose any One Course)	<b>Course – I</b> <b>Biostatistics/</b> Herbs and Drug Action (optional)	5	4	EXT	25	75	100
2	SEMESTER VI	Group – II (Choose any One Course)	<b>Course –II</b> <b>Fermentation Biotechnology/</b> Intellectual Property Rights (optional)	5	4	EXT	25	75	100
3	SEMESTER VI	Group – III (Choose any One Course)	<b>Course – III</b> <b>Basic Bioinformatics/</b> Protein engineering (optional)	5	4	EXT	25	75	100

### ALLIED COURSES

**(Offered to the Students of Biochemistry)**

S. NO	SEMESTER	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	TOTAL
1	SEMESTER III	<b>Allied Course I</b> Biotechnology-I	4	3	EXT	25	75	100
2	SEMESTER IV	<b>Allied Course II</b> Biotechnology-II	4	3	EXT	25	75	100
3	SEMESTER III & IV (Practical)	<b>Allied Practical – II</b> Biotechnology I & II	2	3	INT	40	60	100

### SKILL BASED ELECTIVES

S.NO	SEMESTER	GROUP	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOTAL
1	SEMESTER III	Group – I (Choose any One Course)	<b>Course – I</b> <b>Bioinstrumentation</b> Phytochemical Technique	2	3	INT	25	75	100
2	SEMESTER IV	Group – II (Choose any One Course)	<b>Course – II</b> <b>Plant Tissue Culture</b> Cancer Biology (optional)	2	3	INT	25	75	100
3	SEMESTER V	Group – III (Choose any One Course)	<b>Course –III</b> <b>Molecular Modeling and Drug Designing</b> Nanobiotechnology and Toxicology (optional)	2	3	INT	25	75	100

### NON MAJOR BASED ELECTIVES (Offered to other Department Students)

S.NO.	SEMESTER	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOTAL
1	SEMESTER III	Biotechnology for Human Welfare	2	2	INT	25	75	100
2	SEMESTER IV	Biotechnology and Environment	2	2	INT	25	75	100

### OTHER COURSES

S.NO.	SEMESTER	PART IV/V	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOTAL
1	I	Part - IV	VBE	2	2	INT	25	75	100
2	II	Part - IV	EVS	2	2	INT	25	75	100
3	V	Part - IV	Soft Skills	1	2	INT	25	75	100
4	VI	Part - V	Gender Studies	1	1	INT	25	75	100
5	VI	Part - V	Extension Activities	0	1	INT	25	75	100

### TOTAL NUMBER OF COURSES AND CREDITS

<b>PART</b>	<b>DETAILS</b>	<b>NO. OF COURSES</b>	<b>CREDIT/ COURSE</b>	<b>TOTAL CREDIT</b>
I	Language	4	3	12
II	English	4	3	12
III	Core Courses	9	5	45
	Core Practical	4	5	20
	Allied Course	4	3	12
	Allied Practical	2	3	6
	MBE	3	4	12
IV	SBE	3	2	6
	NME	2	2	4
	EVS	1	2	2
	VBE	1	2	2
	SOFT SKILL	1	2	2
V	GENDER	1	1	1
	EXTENSION	1	1	1
	*Group Project	1	3	3
<b>TOTAL CREDITS</b>		<b>41</b>		<b>140</b>

### BEYOND THE CURRICULUM

<b>A. VALUE ADDED COURSE</b>		
<b>SEMESTER</b>	<b>COURSE</b>	<b>TITLE OF THE PAPER</b>
<b>I</b>	<b>VAC I</b>	Food Technology
<b>II</b>	<b>VAC II</b>	Animal Cell Culture
<b>III</b>	<b>VAC III</b>	Human Physiology and Anatomy
<b>B. CERTIFICATE COURSES</b>		
<b>SEMESTER</b>	<b>COURSE</b>	<b>TITLE OF THE PAPER</b>
<b>II</b>	<b>CC 1</b>	General Microbiology
<b>IV</b>	<b>CC 2</b>	Agricultural Biotechnology
<b>VI</b>	<b>CC 3</b>	Pharmacognosy