BHARATHIDASAN UNIVERSITY TIRUCHIRAPPALLI - 620 024.

B.Sc. BIOCHEMISTRY

CHOICE BASED CREDIT SYSTEM –

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

(Applicable to the candidates admitted from the academic year 2022-23 onwards)

(Naan Mudhalvan scheme has been implemented from 2nd to 4th semester for the 2023-2024 Batch)

Sem.	Part	Course	Title	Hrs/ week	Credit	Exam Hours	Marks		Total
							Int.	Ext.	
I	I	Language Course – I (Tamil $ / Other Languages + #)		6	3	3	25	75	100
	II	English Course – I		6	3	3	25	75	100
	III	Core Course – I (CC)	Cell Biology	5	5	3	25	75	100
		Core Practical – I (CP)	Cell Biology	4	4	3	40	60	100
		First Allied Course – I (AC)	General Chemistry	4	4	3	25	75	100
		First Allied Practical - I (AP)	General Chemistry	3	-	-	-	-	-
	IV	Value Education		2	2	3	25	75	100
	TOTAL			**30**	**21**	**-**	**-**	**-**	**600**
II	I	Language Course – II (Tamil $ / Other Languages + #)		6	3	3	25	75	100
	II	English Course – II		4	3	3	25	75	100
	III	Core Course – II (CC)	Molecules of Life	5	5	3	25	75	100
		Core Practical – II (CP)	Molecules of Life	4	4	3	40	60	100
		First Allied course - II (AC)	Organic Chemistry	4	4	3	25	75	100
		First Allied Practical (AP)	General Chemistry	3	2	3	40	60	100
		Add on Course – I ##	Professional English – I	6*	4	3	25	75	100
	IV	Environmental Studies		2	2	3	25	75	100
	VI	Language Proficiency for Employability (NM) @@	Language Proficiency for Employability – Overview of English Language Communication	2	2	3	25	75	100
	TOTAL			**30**	**29**	**-**	**-**	**-**	**900**

III	I	Language Course – III (Tamil $ / Other Languages + #)		6	3	3	25	75	100
	II	English Course – III		6	3	3	25	75	100
	III	Core Course – III (CC)	Biochemical Techniques	5	5	3	25	75	100
		Core Practical – III (CP)	Biochemical Techniques	4	4	3	40	60	100
		Second Allied Course – I (AC)	Basic Microbiology	4	4	3	25	75	100
		Second Allied Practical (AP)	Basic Microbiology	3	-	-	-	-	-
		Add on Course – II ##	Professional English - II	6*	4	3	25	75	100
	IV	Non-Major Elective – I @ Those who choose Tamil in Part I can choose a non-major elective course offered by other departments. Those who do not choose Tamil in Part I must choose either a) Basic Tamil if Tamil language was not studied in school level or b) Special Tamil if Tamil language was studied upto 10th & 12th std.	Nutritional Biochemistry	2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Digital Skills for Employability - Microsoft Digital Skills	-	2	3	25	75	100
	TOTAL			**30**	**27**	**-**	**-**	**-**	**800**
IV	I	Language Course –IV (Tamil $ / Other Languages + #)		6	3	3	25	75	100
	II	English Course – IV		6	3	3	25	75	100
	III	Core Course – IV (CC)	Biophysical Chemistry	5	5	3	25	75	100
		Core Practical – IV (CP)	Biophysical Chemistry	4	4	3	40	60	100
		Second Allied Course – II (AC)	Medical Microbiology	4	4	3	25	75	100
		Second Allied Practical (AP)	Basic Microbiology	3	2	3	40	60	100
	IV	Non-Major Elective II @ - Those who choose Tamil in Part I can choose a non-major elective course offered by other departments. Those who do not choose Tamil in Part I must choose either a) Basic Tamil if Tamil language was not studied in school level or b) Special Tamil if Tamil language was studied upto 10th & 12th std.	Clinical Biochemistry	2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Healthcare & Data Management	-	2	3	25	75	100
	TOTAL			**30**	**25**	**-**	**-**	**-**	**800**

V	III	Core Course –V (CC)	Enzymes	5	5	3	25	75	100
		Core Course – VI (CC)	Molecular Biology	5	5	3	25	75	100
		Core Course – VII (CC)	Intermediary Metabolism	5	5	3	25	75	100
		Core Practical –V (CP)	Enzyme Kinetics and Molecular Biology	4	4	3	40	60	100
		Major Based Elective – I (Any one)	1. Human Physiology 2. Basic Biotechnology	5	4	3	25	75	100
	IV	Skill Based Elective I	Bio-Instrumentation	4	2	3	25	75	100
		Soft Skills Development		2	2	3	25	75	100
	TOTAL			**30**	**27**	**-**	**-**	**-**	**700**
VI	III	Core Course – VIII (CC)	Immunology	6	5	3	25	75	100
		Core Course – IX (CC)	Clinical Biochemistry	6	5	3	25	75	100
		Core Practical – VI (CP)	Clinical Biochemistry and Immunology	4	4	3	40	60	100
		Major Based Elective - II (Any one)	1. Endocrinology 2. Food and Nutrition	5	4	3	25	75	100
		Project		4	3	-	20	80	100
	IV	Skill Based Elective – II	Medical Lab Technology	4	2	3	25	75	100
	V	Extension Activities **		-	1	-	-	-	-
		Gender Studies		1	1	3	25	75	100
	TOTAL			**30**	**25**	**-**	**-**	**-**	**700**
GRAND TOTAL				**180**	**154**	**-**	**-**	**-**	**4500**

$ For those who studied Tamil upto 10th +2 (Regular Stream).

+ Syllabus for other Languages should be on par with Tamil at degree level.

Those who studied Tamil upto 10th +2 but opt for other languages in degree level under Part- I should study special Tamil in Part – IV.

The Professional English – Four Streams Course is offered in the 2nd and 3rd Semester (only for 2022-2023 Batch) in all UG Courses. It will be taught apart from the Existing hours of teaching / additional hours of teaching (1 hour /day) as a 4 credit paper as an add on course on par with Major Paper and completion of the paper is must to continue his / her studies further. (As per G.O. No. 76, Higher Education (K2) Department dated: 18.07.2020).

* The Extra 6 hrs / cycle as per the G.O. 76/2020 will be utilized for the Add on Professional English Course.

@ Biochemistry students have to choose non-major elective papers offered by other department, NCC Course is one of the Choices in Non-Major Elective Course. Only the NCC cadets are eligible to choose this course. However, NCC Course is not a Compulsory Course for the NCC Cadets.

** Extension Activities shall be outside instruction hours.

@@ Naan Mudhalvan Scheme.

SUMMARY OF CURRICULUM STRUCTURE OF UG PROGRAMMES

Sl. No.	Part	Types of the Courses	No. of Courses	No. of Credits	Marks
1.	I	Language Courses	4	12	400
2.	II	English Courses	4	12	400
3.	III	Core Courses	8	40	800
4.		Core Practical	7	29	700
5.		Allied Courses I & II	4	16	400
6.		Allied Practical	2	4	200
7.		Major Based Elective Courses	2	8	200
8.		Add on Courses	2	8	200
9.		Project	1	3	100
10.	IV	Non-Major Elective Courses (Practical)	2	4	200
11.		Skill Based Elective Courses	2	4	200
12.		Soft Skills Development	1	2	100
13.		Value Education	1	2	100
14.		Environmental Studies	1	2	100
15.	V	Gender Studies	1	1	100
16.		Extension Activities	1	1	--
17.	VI	Naan Mudhalvan Scheme	3	6	300
	Total		**46**	**154**	**4500**

PROGRAM OBJECTIVES:

The B.Sc. Biochemistry program describe accomplishments that graduates are expected to attain within five to seven years after graduation

- An ability to apply fundamental knowledge related to sciences in an interdisciplinary manner for providing innovative solutions to need based problems for global impact
- An ability to critically analyze scientific data, draw objective conclusions and apply this knowledge for human welfare. Students should be able to demonstrate expertise and ethical perspective on areas related to Biochemistry
- An ability to gain domain knowledge and know-how for a successful career in academia, industry and research. Promoting lifelong learning to meet the ever evolving professional demands by developing ethical, inter personal and team skills.

PROGRAM OUTCOMES:

After the successful completion of B.Sc. Biochemistry program, the students are expected to

- Broad based knowledge in biochemistry
- Ability to understand the technical aspects of existing technologies that help in addressing the biological and medical challenges faced by humankind. Ability to contribute effectively in the development of the ethical practices, societal contributions, and leading to responsible and competent professionals
- Ability to contribute effectively in the development of the ethical practices, societal contributions, and leading to responsible and competent professionals
- Acquiring the ability of leadership skills to manage projects in multidisciplinary environments
- To compete globally with confidence in all the sectors of life science.

EMPLOYMENT OPPORTUNITY:

After the successful completion of B.Sc. Biochemistry program, the students are expected to

- Biotechnology Firms
- Diagnostics Centres
- Colleges and Universities
- Pharma Companies
- Medical Equipment manufacturing Companies