



## B.Sc. MICROBIOLOGY

## CHOICE BASED CREDIT SYSTEM -

## LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

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

(NaanMudhalvan scheme has been implemented from 2nd to 5th semester for the 2023-2024 Batch)

Sem.	Part	Course	Title	Ins. Hrs.	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)	Basics of Microbiology	5	5	3	25	75	100
			Core Practical – I (CP)	Basics of Microbiology	4	4	3	40	60	100
			First Allied Course – I (AC)	Fundamentals of Biological Sciences	4	4	3	25	75	100
			First Allied Practical (AP)	Fundamentals of Biological Sciences & General Biochemistry	3	-	-	-	-	-
	IV	Value Education		2	2	3	25	75	100	
<b>TOTAL</b>				<b>30</b>	<b>21</b>	-	-	-	<b>600</b>	
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)	Microbial Physiology	5	5	3	25	75	100
			Core Practical – II (CP)	Microbial Physiology	4	4	3	40	60	100
			First Allied Practical (AP)	Fundamentals of Biological Sciences & General Biochemistry	3	2	3	40	60	100
			First Allied Course – II (AC)	General Biochemistry	4	4	3	25	75	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 (NMS) @@	Language Proficiency for Employability - Overview of English Language Communication	2	2	3	25	75	100		
<b>TOTAL</b>				<b>30</b>	<b>29</b>	-	-	-	<b>900</b>	

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)	Introductory Virology	5	5	3	25	75	100	
		Core Practical – III (CP)	Introductory Virology	4	4	3	40	60	100	
		Second Allied Course – I (AC)	Biostatistics	4	4	3	25	75	100	
		Second Allied Practical (AP)	Biostatistics & Bioinformatics and Computational Biology	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 10 <sup>th</sup> & 12 <sup>th</sup> std.	Clinical Bacteriology	2	2	3	25	75	100	
	VI	NaanMudhalvan Scheme (NMS) @@	Digital Skills for Employability – Microsoft Digital Skills	-	2	3	25	75	100	
	<b>TOTAL</b>				<b>30</b>	<b>27</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>800</b>
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)	Immunology	5	5	3	25	75	100	
		Core Practical – IV (CP)	Immunology	4	4	3	40	60	100	
		Second Allied Practical (AP)	Biostatistics & Bioinformatics and Computational Biology	3	2	3	40	60	100	
		Second Allied Course – II (AC)	Bioinformatics and Computational Biology	4	4	3	25	75	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 10 <sup>th</sup> & 12 <sup>th</sup> std.	Antimicrobial Agents	2	2	3	25	75	100	
	VI	NaanMudhalvan Scheme (NMS) @@	Healthcare & Data Management	-	2	3	25	75	100	
	<b>TOTAL</b>				<b>30</b>	<b>25</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>800</b>

V	III	Core Course –V (CC)	Medical Microbiology	5	5	3	25	75	100
		Core Course – VI(CC)	Environment and Agricultural Microbiology	5	5	3	25	75	100
		Core Course – VII(CC)	Molecular Biology and Microbial Genetics	5	5	3	25	75	100
		Core Practical –V (CP)	Medical Microbiology, Environment and Agricultural Microbiology & Molecular Biology and Microbial Genetics	4	4	3	40	60	100
		Major Based Elective – I (Any one)	1. Diagnostic Microbiology 2. Pharmaceutical Microbiology	5	4	3	25	75	100
	IV	Skill Based Elective I	Mushroom Technology	4	2	3	25	75	100
		Soft Skills Development		2	2	3	25	75	100
	VI	NaanMudhalvan Scheme (NMS) @	Medical Coding	-	2	3	25	75	100
	<b>TOTAL</b>			<b>30</b>	<b>29</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>800</b>
	VI	III	Core Course – VIII (CC)	Food Microbiology	6	5	3	25	75
Core Course – IX (CC)			Industrial Microbiology	6	5	3	25	75	100
Core Practical – VI(CP)			Food Microbiology and Industrial Microbiology	4	4	3	40	60	100
Major Based Elective – II (Any one)			1. Recombinant DNA Technology 2. Microbial Biotechnology & Bioethics	5	4	3	25	75	100
Project			Group Project (3 to 5 candidates)	4	3	-	20	80	100
IV		Skill Based Elective – II	Biofertilizer Technology	4	2	3	25	75	100
V		Extension Activities **		-	1	-	-	-	-
		Gender Studies		1	1	3	25	75	100
<b>TOTAL</b>			<b>30</b>	<b>25</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>700</b>	
<b>GRAND TOTAL</b>			<b>180</b>	<b>156</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4600</b>	

\$For those who studied Tamil upto 10<sup>th</sup>+2 (Regular Stream).

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

# Those who studied Tamil upto 10<sup>th</sup>+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 2<sup>nd</sup> and 3<sup>rd</sup> 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.

@ 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.

@@ NaanMudhalvan 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	9	45	800
4.		Core Practical	6	24	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	0
17.	VI	NaanMudhalvan Scheme	4	8	400
		<b>Total</b>	<b>47</b>	<b>156</b>	<b>4600</b>

### PROGRAMME OUTCOMES

- Graduates would acquire both theoretical and practical knowledge of fundamental concepts in Microbiology.
- Graduates would knowledgeably be competent with characteristics, skills and cognizance established.
- A microbiologist could enter into higher studies for their passion of futuristic drive or could prefer academia for manifesting instructional capability.
- After graduation, the graduates can join public health sectors not only for career advancement but, for the betterment/welfare of the human society as well.
- Understand and appreciate the importance of microbes in different arena of novelty for day-to-day applications.

### PROGRAMME SPECIFIC OUTCOMES

- Understanding of the fundamentals of Microbiology as applicable to wide ranging frameworks.
- Graduates would have appropriate aids of Microbiology and can perform their duties as a subject authority.
- The interdisciplinary subjects of Microbiology graduates would attribute them with skills of other arena and would assist in solving broader problems.
- Knowledge of the Microbiology curriculum and other allied subjects together would certainly guarantee promising career opportunities in academic, research and industrial sectors.
- The knowledge of microbes, understanding of microbial nature and benefits of their byproducts' for human society would ensure lifelong merit.