

Scheme of Examination

(Applicable to the students admitted during the academic year 2018-2019 on words)

B.Sc., Biochemistry with Nanotechnology

Semester	Part	Course. Code	Name of the Course	Instruction hours / week	Duration of Examination	Examination Marks			Credits
						CIA	ESE	Total	
I	I	18U1TAM101 / 18U1HIN101 / 18U1MAL101 / 18U1FRN101	Language I	5	3	25	75	100	4
I	II	18U2ENG101	English I	5	3	25	75	100	4
I	III	18U3BNC101	Core Paper I Biomolecules : Structure & its Properties.	5	3	25	75	100	4
		18U3BNC102	Core Paper II Cellular Biochemistry	5	3	25	75	100	4
		18U3BNP204	Core Paper IV Biochemistry Practical I	3	-	-	-	-	-
		18U3BNA101	Allied Paper I Biochemical Techniques	4	3	20	55	75	3
I	IV	18U4ENV101	Ability Enhanced Compulsory Course - Environmental Studies	2	3	-	50	50	2
I	IV	18U4HVY101	Human Excellence – Human Values and Yoga Practice I	1	-	-	-	-	-
				30				525	21
II	I	18U1TAM202 / 18U1HIN202/ 18U1MAL202 / 18U1FRN202	Language II	5	3	25	75	100	4
II	II	18U2ENG202	English II	5	3	25	75	100	4
II	III	18U3BNC203	Core Paper III Enzymology & Its Application	5	3	25	75	100	4
		18U3BNP204	Core Paper IV Biochemistry Practical I	5	3	40	60	100	4
		18U3BNA202	Allied Paper II Essentials of Basic Microbiology	4	3	20	55	75	3
		18U3BNR203	Allied Paper III Practical Microbiology	3	3	20	30	50	2
II	IV	18U4HRC202	Human Rights and Constitution of India	2	3	-	50	50	2
	IV	18U4HVY202	Human Excellence – Human Values and Yoga Practice I	1	2	25	25	50	2
				30				625	25
III	I	18U1TAM303 / 18U1HIN303 / 18U1MAL303 / 18U1FRN303	Language III	5	3	25	75	100	4
III	II	18U2ENG303	English III	5	3	25	75	100	4
III	III	18U3BNC305	Core Paper V Introduction to Nanoscience and Nanomaterials	5	3	25	75	100	4
		18U3BNP407	Core Paper VII Biochemistry Practical II	3	-	-	-	-	-
		18U3BNA304	Allied Paper IV Basic Mathematics and Biostatistics	4	3	20	55	75	3
III	IV	18U4BNS301	Skill Based Subject- Introduction to Bioinformatics	3	3	20	55	75	2

III	IV	18U4NM3BT1 / 18U4NM3AT1/ 18U4NM3YHE/ 18U4NM3GTS/ 18U4NM3WRT	# @ Basic Tamil / ##Advanced Tamil / * NME: Yoga for Human Excellence / Gandhian Thoughts / Women's Rights	2	3	50	50	2	
III	IV	18U4BN3ED1	Extra Departmental Course	2	3	-	50	2	
	IV	18U4HVVY303	Human Excellence – Human Values and Yoga Practice II	1	-	-	-	-	
III	IV	18U4BNVALC	** Skill Enhancement Add On Course – Institution Industry Linkage	-	-	-	-	Grade	
				30			550	21	
IV	I	18U1TAM404 / 18U1HIN404 / 18U1MAL404 / 18U1FRN404	Language IV	5	3	25	75	100	4
IV	II	18U2ENG101	English IV	5	3	25	75	100	4
IV	III	18U3BNC406	Core Paper VI Intermediary Metabolism	4	3	25	75	100	4
		18U3BNP407	Core Paper VII Biochemistry Practical II	4	6	40	60	100	4
		18U3BNA405	Allied Paper V Basics of Computer Science	4	3	20	55	75	2
		18U3BNR406	Allied Paper VI Basic Computer Science Practicals.	2	3	20	30	50	2
IV	IV	18U4BNS402	Skill Based Course I - Biophysics	3	3	20	55	75	2
IV	IV	18U4NM4BT1 / 18U4NM4AT1 18U4NM4GEN	# @ Basic Tamil / ##Advanced Tamil / General Awareness	2	3	50	50	2	
	IV	18U4HVVY404	Human Excellence – Human Values and Yoga Practice II	1	2	25	25	50	2
IV	IV	18U4BNVALC	**Skill Enhancement Add On Course – Institution Industry Linkage	-	-	-	-	Grade	
				30			700	26	
V	III	18U3BNC508	Core Paper VIII Human Anatomy & Physiology	4	3	25	75	100	4
		18U3BNC509	Core Paper IX Clinical Biochemistry : Tests & Interpretations.	4	3	25	75	100	4
		18U3BNC510	Core Paper X Nano Biotechnology	4	3	25	75	100	4
		18U3BNC511	Core Paper XI Plant Biochemistry	4	3	25	75	100	4
		18U3BNP614	Core Paper XIV Biochemistry Practical III	4	-	-	-	-	-
		18U3BNP615	Core Paper XV Biochemistry Practical IV	3	-	-	-	-	-
		18U3BNE501/502/503	Discipline Specific Elective I	3	3	20	55	75	3
V	IV	18U4BNS503	Skill Based Course II: Genomics and Proteomics	4	3	20	55	75	2
				30			550	21	
VI	III	18U3BNC612	Core Paper XII Molecular Biology	4	3	25	75	100	4
		18U3BNC613	Core Paper XIII Biomedical Applications of Nano technology	4	3	25	75	100	4
		18U3BNP614	Core Paper XIV Biochemistry Practical III	5	6	40	60	100	4

		18U3BNP615	Core Paper XV Biochemistry Practical IV	5	6	20	55	75	4
		18U3BNE604/605/606	Discipline Specific Elective II	4	3	20	55	75	3
		18U3BNE607/608/609	Discipline Specific Elective III	4	3	20	55	75	3
	IV	18U4BNS404	Skill Based Course III - Basics of Patents and Bioethics	4	3	20	55	75	2
VI	V	18U5BN6EXT	Extension Activity	-	-	50	-	50	2
				30				650	26
Total								3600	140
Additional Credit (Optional)Semester II-VI									8 ^s

Basic Tamil -Students who have not studied Tamil upto 12th standard.

##**Advance Tamil** – Students who have studied Tamil language upto 12th standard and chosen other languages under part I of the programme but would like to advance theirTamil language skills.

* **NME** – Student shall choose any one course out of three courses.

@ No End Semester Examinations. Only Continuous Internal Assessment (CIA)

\$ - Not included in Total marks & CGPA Calculation

** - Examination and evaluation for value added course shall be conducted by the industry and the marks shall be submitted to the CoE for the award of the grade.

List of Discipline Specific Elective papers (Choose any one of the paper)

Elective-I	Subject Code		Name of the Subject
Elective – I	18U3BNE 501	A	Immunology and Immuno Diagnostic Techniques
	18U3BNE 502	B	Pharmaceutical Biochemistry
	18U3BNE 503	C	Nutritional Biochemistry
Elective – II	18U3BNE 604	A	Plant and Animal Biotechnology
	18U3BNE 605	B	Genetic Engineering
	18U3BNE 606	C	Plant Based Therapeutics
Elective - III	18U3BNE 607	A	Diagnostic Biochemistry
	18U3BNE 608	B	Sports Biochemistry
	18U3BNE 609	C	Public Health & Hygiene

Extra Departmental Course offered by Biochemistry with Nanotechnology

S.No.	Subject Code	Name of the Subject
1	18U4EC4ED1	Basics of Nutrition
2	18U4EC4ED2	Herbal Remedies

Additional Credit Course

Earning Additional credit course is not mandatory for Course Completion

Additional credits: 8

S. No.	Subject	Credit/ course	Total credits
1	Completion of Certificate Course	1	1
2	Hindi/ other Foreign languages	1	1
3	Self Study Papers	1	2
4	MOOC Courses/Spoken Tutorial prescribed by the Department	1	3
5	Representation - Sports/Social Activities/ Co curricular/Extracurricular Activities at University/ District/ State/ National/ International levels	1	1
Total			8

Rules: The Students can earn additional credits only if they complete the above during the course period (II to V Sem) and based on the following criteria. Proof of Completion must be submitted to the Office of Controller of Examinations before the commencement of the VI Semester. (Earning Additional credit course is not mandatory for Course Completion)

1. Students can complete Certification Courses for a minimum of 30hrs (II to V Sem only) from reputed centres and the same certificate shall be produced to earn a credit. They shall be guided by the Department if needed.
2. Students can opt Hindi/ any Foreign Language approved by Certified Institutions to earn one credit. The certificate of Hindi must be obtained from DakshinBharat Hindi Prachar Sabha and He/ She has to enrol and complete during their course period (II to V Sem only)
3. Students can earn one credit, if they complete one self study Paper prescribed by the Department. The Departments shall offer two Self Study Papers.

Self Study Paper offered by Biochemistry with Nanotechnology Department

S. No.	Semester	Course code	Course Title
1	Semester II to V	18UBNSS01	Biofuels
2		18UBNSS02	Nutrition and Food Adulteration

4. Students can earn one Credit, if they complete any one MOOC courses/ Spoken Tutorial prescribed by the Department. Students shall earn a maximum of 3 Additional Credits by completing 3 online courses.

List of Online Courses prescribed by Biochemistry with Nanotechnology Department

- 1.Cell Designer
- 2.Jmol
- 3.Avogadro
- 4.Biopython
- 5.USCF Chimera

Summer Training /Internship

The student should undergo an Summer Training / Internship in any of the recognized research laboratory or biochemistry lab for a period of 20 days during IV semester vacation and submit an certificate and report to the Department during the beginning of V semester.

Note: Other than the above mentioned courses, any course from recognized websites with the consent of the Head of the Department will also be accepted.

5. Award Winners in Sports/Social Activities/ Co curricular/ Extra Curricular Activities at University/ District/ State/ National/ International levels can earn One Extra Credit by producing the Certificate.

PROGRAMME OUTCOME

PO 1: Critical Thinking : Students as Biochemistry Major will gain proficiency in basic laboratory techniques and be able to apply the scientific method to the processes of experimentation and hypothesis testing.

PO 2: Ethics : Students will understand and practice the ethics surrounding scientific research and career.

PO 3 : Self Directed and Life – Long Learning : build on their knowledge and understanding in tackling more advanced and specialised courses, and more widely to pursue independent, self-directed and critical learning.

PO 4 : Environment and Sustainability : Students will use current biochemical and molecular techniques to plan and carry out experiments. They will generate and test hypotheses, analyze data using statistical methods where appropriate, and appreciate the limitations of conclusions drawn from experimental data.

PO 5: Communication Skill : Students will develop the ability to understand conference talks and about topics described during the lectures.

PROGRAMME SPECIFIC OUTCOMES

PSO 1 : Students will be able to demonstrate an understanding of fundamental biochemical principles, structure/function of biomolecules.

PSO 2 : Develop laboratory techniques and skill to be capable of designing, carrying out, interpreting scientific experiments.

PSO 3 : To be knowledgeable in proper procedures and regulations in handling and disposal of biological substances.

PSO 4 : Be knowledgeable in theory , laboratory techniques and be able to use modern instrumentation.

PSO 5 : On completion of the course the students will recognize and apply key principles of biochemistry for their professional growth.

Chairman
Board of Studies in Biochemistry with Nanotechnology
Nehru Arts and Science College
Coimbatore