KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

COIMBATORE – 641 029

DEPARTMENT OF BIOTECHNOLOGY (PG)

CURRICULUM AND SCHEME OF EXAMINATIONS (CBCS)

(2020 – 2021 and onwards)

KONGUNADU ARTS AND SCIENCE COLLEGE (Autonomous)
COIMBATORE-641 029.
M.Sc. BIOTECHNOLOGY
Curriculum & Scheme of Examination under CBCS
(Applicable to Students Admitted from the Academic Year 2020–2021 and onwards)

Semester	Subject Code	Title of the Paper	Instruction Hours / cycle	Exam. Marks			Duration of Exam. Hrs.	Credits
				CIA	ESE	Total		
I	20PBT101	C.P.1 – Biochemistry and Metabolism	5	25	75	100	3	5
	20PBT102	C.P.2 – Biostatistics and Bioinstrumentation	5	25	75	100	3	4
	20PBT103	C.P.3 - Cell Biology and Molecular Genetics	5	25	75	100	3	5
	20PBT104	C.P.4 –Microbiology	5	25	75	100	3	4
	20PBT1CL	C.Pr.1- Lab in Biochemistry, Biostatistics and Bioinstrumentation	5	40	60	100	6	3
	20PBT1CM	C.Pr.2- Lab in Molecular Genetics and Microbiology	5	40	60	100	6	3
		Total	**30**	**-**	**-**	**600**	**-**	**24**
II	20PBT205	C.P.5 – Genetic Engineering	5	25	75	100	3	5
	20PBT206	C.P.6 –Immunology and Immunotechnology	5	25	75	100	3	5
	20PBT207	C.P.7 - Animal Biotechnology	5	25	75	100	3	4
	20PBT208	C.P.8 - Environmental Biotechnology and Bionanotechnology	5	25	75	100	3	4
	20PBT2CN	C.Pr.3 - Lab in Molecular Biology and Genetic Engineering	5	40	60	100	6	3
	20PBT2CO	C.Pr.4 - Lab in Immunotechnology, Animal Biotechnology and Environmental Biotechnology	5	40	60	100	6	3
		Total	**30**	**-**	**-**	**600**	**-**	**24**
III	20PBT309	C.P.9 – FermentationTechnology	5	25	75	100	3	5
	20PBT310	C.P.10 - Plant Biotechnology	5	25	75	100	3	5
	20PBT311	C.P.11 - Genomics, Proteomics and Computational Biology	4	25	75	100	3	4
	20PBT3E1	Major Elective I	5	25	75	100	3	5
	20PBT3CP	C.Pr.5 -Lab in Fermentation Technology, Plant Biotechnology and Computational Biology	5	40	60	100	6	3
	20PBT3N1	Non-Major Elective I – (On-line)	4	25	75	100	3	4
		EDC	2	25	75	100	3	2
	20PBT3ST	Summer Training @	-	-	-	-	-	-
		Total	**30**	**-**	**-**	**700**	**-**	**28**
IV	20PBT4E2	Major Elective II	5	25	75	100	3	5
	20PBT4N2	Non-Major Elective II - (On-line)	4	25	75	100	3	4
	20PBT4Z1	Project Work *	21	20	80*	100	3	5
		Total	**30**	**-**	**-**	**300**	**-**	**14**
			120	-	-	2200	-	90

Note: CBCS – Choice Based Credit System; CIA – Continuous Internal Assessment;
ESE – End of Semester Examinations; C.P. - Core Paper; C. Pr. – Core Practical ;EDC- Extra Departmental Course

* Project Report – 60 marks; Viva-voce – 20 marks; Internal – 20 marks

@ The students shall undergo an Internship training/field work for a minimum period of 3 weeks at the end of the fourth semester during summer vacation and submit the report in the fifth semester. The report will be evaluated for 100 marks along with the internal viva voce by the faculty members and HoD. According to their marks, the grades will be awarded as given below.

Marks %	Grade
85-100	O
70-84	D
60-69	A
50-59	B
40-49	C
<40	U (Reappear)

Major Elective Papers *(2 papers are to be chosen from the following 4 papers)*
1. Pharmaceutical Biotechnology
2. Bioethics, Biosafety, IPR and Total Quality Management
3. Natural Products and Research Methodology
4. Bioentrepreneurship, Marine and algal biotechnology

Non-Major Elective Papers *(2 papers are to be chosen from the following 2 papers)*
1. Competitive Science – I
2. Competitive Science - II
3. Food Technology
4. Cancer Biology

Extra Departmental Course: (For other department PG students)

20PBT3X1   EDC: Bioentreupreunership Skill Development

Tally Table:

Part	Subject	No. of Subjects	Total Marks	Credits
I	Core – Theory / Practical / Project	17	1700	70
	Major Elective Paper	2	200	10
	Non Major Elective Paper	2	200	8
	EDC	1	100	2
	Grand Total	**22**	**2200**	**90**

Advanced Learner's Course (ALC) under self-study scheme (optional)

Subject Code	Title of the Paper	Exam Marks		Duration of Exam (hours)	Credits
		ESE	Total		
20PBT0D1	ALC.1- Frontier Technologies in Biosciences	100	100	3	2
20PBT0D2	ALC.2- Stem Cell Technology	100	100	3	2

- 25 % CIA is applicable to all theory subjects. Proportion of CIA and ESE for practical is 40: 60.
- JOCs are optional for earning extra credits and are conducted 4 hours / cycle after college hours.

PBT03

Job Oriented Courses (JOC):

1. JOC 1 – Plant Tissue Culture and Organic Farming (20PBT0J1)
2. JOC 2 – Herbal Biotechnology (20PBT0J2)

Note: JOC and ALC which are offered at present will be applicable for the students admitted during the academic year 2020–2021 and will be considered as extra credit courses.

- 25 % CIA is applicable to all subjects except JOC, COP and SWAYAM courses which are considered as extra credit courses.

- The students should complete a SWAYAM-MOOC before the completion of the 3rd semester and the course completed certificate should be submitted to the HOD. Two extra credits will be given to the candidates who have successfully completed.

- A Field Trip preferably relevant to the course should be undertaken every year.

Components of Continuous Internal Assessment

Components			Marks	Total
Theory	CIA 1	75	(75+75 = 150/10) 15	25
	CIA 2	75		
	Assignment/ Demonstration/Seminar		5	
	Attendance		5	
Practical	CIA Practical		25	40
	Observation Notebook		10	
	Attendance		5	
Project	Review		15	20
	Regularity		5	

BLOOM'S TAXONOMY BASED ASSESSMENT PATTERN

K1-Remember; **K2**-Understanding; **K3**-Apply; **K4**-Analyze; **K5**-Evaluate

1. Theory Examination - Part I, II & III

(i) CIA I & II and ESE: 75 Marks

Knowledge Level	Section	Marks	Description	Total
K1 Q1 to 10	A (Answer all)	10 x 1 = 10	MCQ	
K2 Q11 to 15	B (Either or pattern)	5 x 5 = 25	Short Answers	75
K3 & K4 Q16 to 20	C (Either or pattern)	5 x 8 = 40	Descriptive / Detailed	

PBT04

(ii) CIA I & II and ESE: 55 Marks

Knowledge Level	Section	Marks	Description	Total
K1 Q1 to 10	A (Answer all)	10 x 1 = 10	MCQ	
K2 Q11 to 15	B (Either or pattern)	5 x 3 = 15	Short Answers	55
K3 & K4 Q16 to 20	C (Either or pattern)	5 x 6 = 30	Descriptive / Detailed	

2. Practical Examination:

Knowledge Level	Section	Marks	Total
K3	Experiments	50	
K4		10	60
K5	Record Work		

3. Project Viva Voce:

Knowledge Level	Section	Marks	Total
K3	Project Report	70	
K4		10	80
K5	Viva voce		