



Dr. Umayal Ramanathan College for Women

Affiliated to Alagappa University
Recognized u/s 12(B) & 2(f) UGC Act, 1956
Established by Dr. Alagappa Chettiar Educational Trust
Alagappapuram, Karaikudi – 630 003.



**Dr.A.Hemamalini M.B.A.,M.L.M.,M.A.,M.Phil.,Ph.D.,SET.,
Principal**

Date: -

To
The Registrar
Alagappa University
Karaikudi - 630003

Respected Sir,

Subject: Feedback on the curriculum for the academic year 2022 – 2023 - reg

I am writing to inform you that the college has proactively gathered feedback from a diverse range of stakeholders, including students, teachers, alumni, and employers. This initiative aims to enhance the academic quality of the programs and identify any gaps or areas for improvement within the curriculum and syllabus. I am pleased to share with you the insights and suggestions that have emerged from this comprehensive feedback process, along with proposed actions for improvement.

One significant recommendation pertains to the B.Sc. Biotechnology program. Currently, students are enrolled in the Core Course V - Cell and Molecular Biology (7BBT3C1). Recognizing the vast and complex nature of these fields, stakeholders have suggested that Cell Biology and Molecular Biology be restructured as two separate core courses. This restructuring would involve creating distinct theory and practical components for each subject, thereby allowing for a more focused and thorough exploration of each discipline.

Cell Biology and Molecular Biology are foundational to the field of biotechnology, and an in-depth understanding of these subjects is crucial for students' academic and professional development. By dividing them into separate courses, students will receive comprehensive education and hands-on experience in areas, better preparing them for advanced studies and careers in biotechnology and related fields.

I kindly request that these proposed changes be considered for the next syllabus revision to enhance the learning experience and outcomes for the students.

Thanking You.


Principal,

Dr. Umayal Ramanathan College for Women,
Karaikudi.

Ph: 04565 – 22 78 62, 9488949279

VOIP Ph: +914449971111 Extension- 911,912

Email Id: hema@alagappa.org Web: www.alagappa.org



Drumayalramanathancollege for women

ALAGAPPA UNIVERSITY, KARAIKUDI

NEW SYLLABUS UNDER CBCS PATTERN (w.e.f. 2017-18)

B.Sc., BIOTECHNOLOGY – PROGRAMME STRUCTURE

Sem.	Part	Course code	Title of the Course	Cr.	Hrs./ Week	Marks		Total
						Int.	Ext.	
I	I	711T	Tamil/Other languages – I	3	6	25	75	100
	II	712E	English – I	3	6	25	75	100
	III	7BBT1C1	Core – I – Biochemistry	4	6	25	75	100
		7BBT1P1	Core – II– Practical – I – Lab in Biochemistry	4	6	40	60	100
			Allied – I (Theory only) (or) Allied – I (Theory cum Practical)	5 4	5 3	25 15	75 60	100 75
			Allied Practical-I	-	2**	-	-	-
	IV	7NME1A/ 7NME1B/ 7NME1C	(1) Non-Major Elective – I – (A)jkpo;nkhopapd; mbg;gilfs;/ (B) ,f;fhy ,yf;fpak; / (C) Communicative English	2	1	25	75	100
Total(Allied -Theory only)				21	30	--	--	600
Total(Allied -Theory cum Practical)				20				575
II	I	721T	Tamil/Other languages – II	3	6	25	75	100
	II	722E	English – II	3	6	25	75	100
	III	7BBT2C1	Core – III – Microbiology	4	6	25	75	100
		7BBT2P1	Core – IV– Practical – II – Lab in Microbiology	4	5	40	60	100
			Allied – II (Theory only) (or) Allied – II(Theory cum Practical)	5 4	5 3	25 15	75 60	100 75
			Allied Practical-I	2	2	20	30	50
	IV	7BES2	(3) Environmental Studies	2	2	25	75	100
Total(Allied -Theory only)				21	30	--	--	600
Total(Allied -Theory cum Practical)				22				625
III	I	731T	Tamil/Other languages – III	3	6	25	75	100
	II	732E	English – III	3	6	25	75	100
	III	7BBT3C1	Core – V – Cell & Molecular Biology	4	5	25	75	100
		7BBT3P1	Core – VI– Practical – III – Lab in Cell & Molecular Biology	4	5	40	60	100
			Allied – III (Theory only) (or) Allied–III(Theory cum Practical)	5 4	5 3	25 15	75 60	100 75
			Allied Practical-II	-	2	-	-	-
	IV	7NME3A/ 7NME3B/ 7NME3C	(1) Non-major Elective – II – (a) ,yf;fpaKk; nkhopg; gad;ghLk; / (b) goe;jkpo; ,yf;fpaq;fSk; ,yf;fpatuyhWk;/ (c)Effective Employability Skills	2	1	25	75	100
7SBS3A1/ 7SBS3A2/ 7SBS3A3		(2) Skill Based Subjects – I	2	2	25	75	100	
V	7BEA5	Extension Activities	1	--	100	--	100	
Total(Allied -Theory only)				24	30	--	--	800
Total(Allied -Theory cum Practical)				23				775

Dr. Umayal Ramanathan College of Arts and Science, Karaikudi.

II YEAR – III SEMESTER

COURSE CODE: 7BBT3P1

CORE COURSE - VI – PRACTICAL – III - LAB IN CELL & MOLECULAR BIOLOGY

1. Isolation of Chromosomal DNA from animal and plant tissues
2. Estimation of DNA by diphenylamine method
3. Analysis of DNA by agarose gel electrophoresis
4. Estimation of protein by Lowry and Biuret Method.
5. Estimation of RNA by orcinol method
6. Analysis of protein by SDS-PAGE.
7. Isolation of Chloroplast from spinach leaves
8. Observation of human blood cells
9. Measurement of microbial cell size using Ocular and stage Micrometer

Books for References:

1. Molecular Biology and Recombinant DNA Technology: A Practical Book (2011) by Ashok Kumar. Narendra Publishing House.
2. CELL AND MOLECULAR BIOLOGY : A Lab Manual (2013) – 1st edition by K. V. Chaitanya
3. Laboratory Manual of Microbiology, Biochemistry and Molecular Biology (2012) by J. Saxena, M. Baunthiyal, I. Ravi. Scientific Publishers.
4. Lab Molecular Biology Tech: Specialty Review and Self-Assessment – 1st edition- (2016) by Carrie Coover(Editor)




Principal,
Dr. Umayal Ramanathan College for Women,
Karaikudi.

IV	I	741T	Tamil/Other languages – IV	3	6	25	75	100	
	II	742E	English – IV	3	6	25	75	100	
	III	7BBT4C1	Core – VII – Principles of Genetics	4	5	25	75	100	
		7BBT4P1	Core – VIII– Practical – IV – Lab in Genetics	4	4	40	60	100	
			Allied – IV (Theory only) (or)	5	5	25	75	100	
			Allied– IV(Theory cum Practical)	4	3	15	60	75	
			Allied Practical-II	2	2	20	30	50	
	IV	7SBS4B1/ 7SBS4B2 7SBS4B3	(2) Skill Based Subjects – II	2	2	25	75	100	
		7BVE4/ 7BMY4/ 7BWS4	(4) Value Education / Manavalakalai Yoga / Women’s Studies	2	2	25	75	100	
			Total(Allied -Theory only)	23	30	--	--	700	
		Total(Allied -Theory cum Practical)	24				725		
V	III	7BBT5C1	Core– IX – Principles of Immunology	4	5	25	75	100	
		7BBT5P1	Core–X–Practical–V–Lab in Immunotechnology	4	6	40	60	100	
		7BBT5C2	Core – XI – Microbial Biotechnology	4	5	25	75	100	
		7BBTE1A/ 7BBTE1B	Elective – I - A) Biostatistics (or) B) Biophysics	5	5	25	75	100	
		7BBTE2A/ 7BBTE2B	Elective–II- A) Biodiversity (or) B) Ecology and Evolution	5	5	25	75	100	
	IV	7SBS5A4/ 7SBS5A5/ 7SBS5A6/ 7SBS5A7	(2) Skill Based Subjects – I (2) Skill Based Subjects – I	2	2	25	75	100	
				2	2	25	75	100	
			Total	26	30	--	--	700	
	VI	III	7BBT6C1	Core – XII – Recombinant DNA Technology	4	5	25	75	100
			7BBT6P1	Core – XIII – Practical VI– Lab in Genetic Engineering.	4	6	40	60	100
7BBT6C2			Core – XIV – Plant and Animal biotechnology	4	5	25	75	100	
7BBT6PR			Core-XV- Project in Biotechnology	4	5	100	-	100	
7BBTE3A/ 7BBTE3B			Elective – III -A) Human Physiology (or) B)Agrobiotechnology	5	5	25	75	100	
IV		7SBS6B4/ 7SBS6B5/ 7SBS6B6/ 7SBS6B7	(2) Skill Based Subjects – II (2) Skill Based Subjects – II	2	2	25	75	100	
				2	2	25	75	100	
			Total	25	30	--	--	700	
		Grand Total	140	180	--	--	4100		

**** University Examinations will be held in the Even Semesters only.**


 Principal,
 Dr. Umayal Ramanathan College for Women,
 Karaikudi.

II YEAR – III SEMESTER

COURSE CODE: 7BBT3C1

CORE

Unit - I

Cell as a basic unit of living systems: Structure of Prokaryotic and Eukaryotic cell. Broad and detailed classification of cell types within an organism. Cell, tissue, organ and organism and different levels of organization

Unit - II

Cell division – Mitosis, Meiosis. Cell cycle -Introduction and mechanism. Cell synchrony and its applications. Anomalies in Cell Division

Unit - III

Structure and function of cell organelles: Ultrastructure of Cell membrane, Golgi bodies, and Endoplasmic reticulum (rough and smooth). Organization and functions of Cytoskeletons. Organization and functions of nucleus, mitochondria and chloroplasts.

Unit - IV

DNA Replication: Central dogma of molecular Biology. Mechanism of DNA replication in Prokaryotes and Eukaryotes. Enzymes & proteins involved in DNA replication. Models of replication. (Semi-conservative, Unidirectional, bidirectional, rolling circle mechanism).

Unit - V

Transcription – Prokaryotic & Eukaryotic Transcription. Translation: Factors involved in translation – Mechanism of translation in Prokaryotes and Eukaryotes – Initiation – elongation – termination.

Books for Reference:

1. Molecular Biology of Cell (2014) by Bruce Alberts, Alexander Johnson. Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter. Garland Science publication.
2. Molecular Biology – Genes to Proteins (2012) by Burton E. Tropp. Jones and Bartlett Publishers.
3. Biochemistry and Molecular Biology (2014) – 1st edition by Despo Papachristodoulou, Alison Snape, William H. Elliott
4. Freifeder's Essentials of Molecular Biology (2013) by George M. Malacinski. Norosa Publishing House.




Principal,
Dr. Umayal Ramanathan College for Women,
Karaikudi.