

J.J. College of Arts and Science (Autonomous)

Sivapuram Post, Pudukkottai – 622 422

(Re-Accredited by NAAC with B++ – 4th Cycle)

Affiliated to Bharathidasan University, Tiruchirappalli

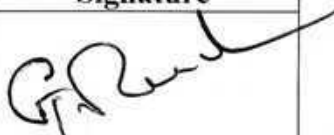
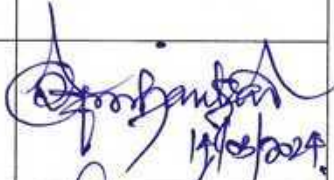
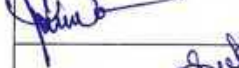
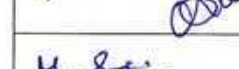
PG & Research Department of Biotechnology

Minutes of the Board of Studies Meeting

Meeting No: 09

Date: 14.03.2024 & Time: 11.00 a.m.

The Meeting of the Board of Studies in Biotechnology (U.G. and P.G.) for the current revision of the curricula to be implemented from 2023-2024, is conducted at 11.00 a.m. on Thursday 14.03.2024.

Sl. No.	Name	Designation	Signature
1	Dr. G. Manigandan Head, Dept. of Biotechnology J.J. College of Arts and Science Pudukkottai – 622 422	Chairman	
2	Dr S. Sivaramakrishnan Professor and Head Department of Biotechnology Bharathidasan University Tiruchirappalli - 622 024	Nominee from the Parent University	 14/3/2024
3	Dr. V. Nithya Assistant Professor Department of Animal Health and Management Alagappa University, Karaikudi - 630 003	Subject Experts Outside the Parent University	 14/3/2024
4	Dr. S. Gowrishankar Assistant Professor Department of Biotechnology Alagappa University, Karaikudi - 630 003	Subject Experts Outside the Parent University	 14/3/2024
5	Dr. V. Jayaramanathan	Senior Faculty members of the Department	 14/3/2024
6	Ms. P. Priyadarshini		 14/3/2024
7	Dr. V. Subramaniyan		 14/3/2024
8	Ms. C. Sumathi		 14/3/2024
9	Ms. M. Sakthipriya		 14/3/2024
10	Mr. T. Venkatesh Stem Cell Technician Chettinad Health City Kelambakkam, Kanchipuram (DT)	Representative from Industry / Corporate	
11	Mr . N. Prasannaganesan Quality Analyst, Medical Coding AGS Health Care, Chennai	Post Graduate Meritorious Alumnus	

The Chairman, **Dr. G. Manigandan** chaired the meeting and welcomed all the members to the ninth BoS Meeting. After the brief introduction, the agenda items listed below were taken up for discussion and the following resolutions were passed.

1. In this notification No: 1616, dated 10.08.2021, the Chief Secretary, Department of Higher Education, Government of Tamil Nadu, has given the Autonomous Colleges, the freedom to retain / reframe their syllabi, Course Structure etc., in keeping with their perceptions on Institutional / local needs.
2. The College Council meeting held on 16.09.2023 resolved that our Institution will gratefully accept the academic freedom and empower the Boards of Studies either to retain or to reframe their Curriculum for various Programmes under CBCS and UGC- LOCF.
3. However, the Course Structure for the U.G. & P.G. Programmes at Institutional level will have to follow a uniform pattern with minor variations depending on the discipline specific needs.
4. It is resolved to modify and follow a total of 43 courses, 4300 marks and 141 credits for the U.G. Programmes and 22 courses, 2200 marks and 90 credits for the P.G. Programmes.

Distribution of Courses and Credits - U.G.

Sl. No.	Part	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	37	800
4.		Core Practical	6	28	600
5.		Project Work	1	04	100
6.		Discipline Specific Elective Courses	8	24	800
7.	IV	Internship	1	02	100
8.		Skill Enhancement Courses	7	14	700
9.		Value Education	1	02	100
10.		Environmental Studies	1	02	100
11.		Foundation Course	1	02	100
12.	V	Gender Studies	1	01	100
13.		Extension Activity	-	01	-
Total			43	141	4300

G.R.

Dr. G. MANIGANDAN Ph.D., SETNET PROFESSOR & HEAD
Assistant Professor and Head
PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422

Dr. S. Sivaramakrishnan

Dr. S. SIVARAMAKRISHNAN Ph.D., SETNET PROFESSOR & HEAD
DEPARTMENT OF BIO TECHNOLOGY
BIOTECHNOLOGY & GENETIC ENGINEERING
RATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI-620 024

Dr. V. Nithya

Dr. V. NITHYA, M.Sc.(BC), M.Sc. (Assistant Professor)
M.Sc.(BI), M.Phil., PGDBI, M.B.A., Ph.D., D.Sc. (Assistant Professor)
Department of Biotechnology
Science Campus
Alagappa University
Karaikudi - 630 003.
Department of Animal Health & Management,
Alagappa University, Karaikudi - 630 003.
Tamil Nadu, India.

Dr. S. Gowrishankar

Dr. S. GOWRISHANKAR Ph.D., SETNET PROFESSOR & HEAD
Assistant Professor
Department of Biotechnology
Science Campus
Alagappa University
Karaikudi - 630 003.

Distribution of Courses and Credits - P.G.

Sl.No.	Types of the Courses	No. of Courses	No. of Credits	Marks
1.	Core Courses	12	58	1200
2.	Project Work	01	10	100
3.	Discipline Specific Elective Courses	05	15	500
4.	Internship	01	03	100
5.	Skill Enhancement Courses	02	04	200
Total		21	90	2100

5. The Revised Syllabus has been implemented from the Academic Year 2023 – 2024 onwards. In the previous Boards of Studies meeting, the Syllabus for first two Semesters have been passed. Now in the light of the Government Communication, cited in Point No. 1, the Chairman of the Boards of Studies has introduced some changes in the Syllabus for Semester I and Semester II. Such modifications are approved and passed by this Board.
6. The Course Structure mentioned in Point No: 4 for U.G.& P.G. Programmes have already been approved and passed by the Board of studies on 02.05.2023
7. In the present revision and modification, the General instructions on Curriculum Design, Course Structure, Uniformity of standards etc., given by the UGC - LOCF, AICTE, NAAC, TANSCH and the Parent University have been scrupulously followed.
8. Following the suggestion given by the Honorable members of the Academic Council in its last meeting, a course on Gender Studies has been included.
9. Resolved to include various online courses like SWAYAM - MOOCs with extra credits. The credits thus earned will be reflected in the Cumulative Mark Statement of the students.
10. Resolved to continue offering Value Added Courses.
11. List the Courses newly introduced in UG & PG and details of Percentage of Revision carried out as an appendix.


Dr. G. MANIGANDAN Ph.D., SET, NET
 Assistant Professor and Head
 PG & Research Department of Biotechnology
 J. College of Arts and Science (Autonomous)
 Pudukkottai - 622 422


Dr. S. SIVARAMAKRISHNAN
 PROFESSOR & HEAD
 DEPARTMENT OF BIO TECHNOLOGY
 SCHOOL OF BIOTECHNOLOGY & GENETIC ENGINEERING
 BHARATHIDASAN UNIVERSITY
 TIRUCHIRAPPALLI-620 024


Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT),
 M.Sc.(BI), M.Phil., PGDBL, M.B.A., Ph.D. D.Sc.(BT)
 Assistant Professor,
 Department of Animal Health & Management
 Akagappa University, Karaikudi - 630 003,
 Tamil Nadu, India.


Dr. S. GOWRISHANKAR
 Assistant Professor
 Department of Biotechnology
 Science Campus
 Akagappa University
 Karaikudi - 630 003.

12. Resolved to have the following 16 Core Courses for UG semesters wise

SEMESTER I

1. Cell and Molecular Developmental Biology (It is the Core Course of previous Curriculum, the content was modified)
2. Practical I - Cell and Molecular Developmental Biology (It is the Core Course of previous Curriculum, the content was modified)

SEMESTER II

3. Genetics (It is the Core Course of previous Curriculum, the content was modified)
4. Practical - II (Covering CC3) (It is the Core Course of previous Curriculum, the content was modified)

SEMESTER III

5. Immunology and Immunotechnology (It is the Allied Course of previous Curriculum, title of the course modified and Immunotechnology contents included in the syllabus)
6. Practical - III (Covering CC5) (It is the Allied Course of previous Curriculum, title of the course modified and Immunotechnology content is included in the syllabus)

ii.

SEMESTER IV

7. Genetic Engineering (It is the Core Course of previous Curriculum, title of the course modified and also the recent trends contents included in the syllabus)
8. Practical - IV (Covering CC7) (It is the Core Course of previous Curriculum, Three new experiments were included in the syllabus)

SEMESTER V

9. Plant Biotechnology (It is the Core Course of previous Curriculum- Plant and animal Biotechnology , At present the title is Plant Biotechnology alone and the content was also modified)
10. Animal Biotechnology (It is the Core Course of previous Curriculum - Plant and animal Biotechnology ,At present the title is Animal Biotechnology alone and the content was also modified)
11. Industrial Biotechnology (It is the Core Course of previous Curriculum- Food and Industrial Biotechnology , At present the title is Industrial Biotechnology alone and the content was also modified)


Dr. G. MANIGANDAN Ph.D., SET, NET
Assistant Professor and Head
PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422


Dr. S. SIVARAMAKRISHNAN
PROFESSOR & HEAD
DEPARTMENT OF BIO TECHNOLOGY
SCHOOL OF BIOTECHNOLOGY & GENETIC ENGINEERING
BHARATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI - 620 024


Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT),
M.Sc.(BI), M.Phil., PGDBI, M.B.A., Ph.D., D.Sc.(BT)
Assistant Professor,
Department of Animal Health & Management/
Alagappa University, Karaikudi - 630 003.
Tamil Nadu, India.

12. Practical - V (Covering CC9,CC10 & CC11) (It is the Core Course of previous Curriculum, the contents were modified)

SEMESTER VI

13. Environmental Biotechnology (This Core Course Microbial and Environmental Biotechnology of previous Curriculum, title of the course was modified and the content was also changed)
14. Practical - VI (Covering CC13) (This Core Course Microbial and Environmental Biotechnology of previous Curriculum, title of the course modified and the content was also changed)
15. Project work (This Core Course is newly introduced)

13. Resolved to have the following 13 Discipline Specific Elective Courses for U.G

SEMESTER I

1. Biological Chemistry (It is the Allied Course of previous Curriculum, the content was modified)
2. Anatomy & Physiology (It is the skill enhancement Course of previous Curriculum, content was modified)

SEMESTER II

3. Microbiology (It is the Core Course of previous Curriculum, content was modified)

SEMESTER III

4. Bioinstrumentation (It is the Core Course of previous Curriculum and the content was modified.)
5. Bioresource Technology (It is the Generic elective course of previous Curriculum And the content was modified)

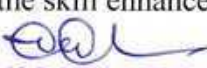
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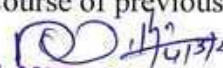
6. Bioinformatics and Biostatistics (It is the skill enhancement Course of previous Curriculum, title of the course modified and the content was modified)
7. Bioethics and Biosafety (This Course is newly introduced)

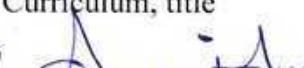
SEMESTER V

8. Cancer Biology (This Course is newly introduced)
9. Enzymology (It is the Allied Course of previous Curriculum but content was modified)
10. Gene therapy (This Course is newly introduced)
11. Bioenterpreneurship (It is the skill enhancement Course of previous Curriculum, title


Dr. G. MANIGANDAN Ph.D., SET, NET
Assistant Professor and Head
PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422


Dr. S. SIVARAMAKRISHNAN M.Sc.(BI), M.Phil., PGDBI, M.B.A., Ph.D., Disc. (BT)
PROFESSOR & HEAD
DEPARTMENT OF BIO TECHNOLOGY
SCHOOL OF BIOTECHNOLOGY & GENETIC ENGINEERING
BHARATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI - 620 024


Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT), Ph.D.
Assistant Professor,
Department of Animal Health & Management,
Kattankudi - 630 003.
Alegappa University, Karaikal - 605 005


Dr. S. SIVARAJ, M.Sc.(BT), Ph.D.
Assistant Professor,
Department of Animal Health & Management,
Kattankudi - 630 003.
Alegappa University, Karaikal - 605 005

of the course and the content was modified)

12. Bioethics and Biosafety (This Course is newly introduced)

SEMESTER VI

13. Nanobiotechnology (It is the skill enhancement Course of previous Curriculum, title of the course modified and the content was also modified)

14. Forensic Science (This Course is newly introduced)

15. Agricultural Biotechnology (It is the elective course of previous Curriculum, content was modified)

16. Genomics and Proteomics (This Course is newly introduced)

14. Resolved to have the following 12 Skill Enhancement Courses (SEC)

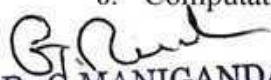
1. Office Automation - from CS Department (This Course is newly introduced)
2. Quantitative Aptitude II - from Maths Department (This Course is newly introduced)
3. Marine Biotechnology, Stem cell technology, Vermitechnology (It is the elective course of previous Curriculum, the content was modified)
4. Aquatic Biotechnology (This Course is newly introduced)
5. Bromotology (This Core Course is newly introduced)
6. Food safety & Quality control (This Course is newly introduced)
7. Mushroom Technology (It is the discipline specific elective course of previous Curriculum, the content was modified)
8. Biofertilizers, Pharmaceutical Biotechnology, (It is the discipline specific elective course of previous Curriculum and the content was modified)

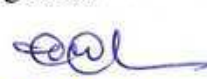
15. Resolved to introduce the Foundation Course -

- i. Good Laboratory Practices (GLP) (This Course is newly introduced)

16. Resolved to have the following 8 Non Major Elective

1. Food and Nutrition
2. Herbal Medicine
3. Public Health and Hygiene
4. Environment Management in Industries (It is newly introduced Course)
5. Good Laboratory Practices (It is newly introduced Course)
6. Organic Farming and Health Management
7. Biotechnology for Society
8. Computational Biology


Dr. G. MANIGANDAN Ph.D., SET, NET
Assistant Professor and Head
PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422


Dr. S. SIVARAMAKRISHNAN
PROFESSOR & HEAD
DEPARTMENT OF BIO TECHNOLOGY
SCHOOL OF BIOTECHNOLOGY & GENETIC ENGINEERING
BHARATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI - 620 024


Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT),
M.Sc.(BI), M.Phil., PGDRI., M.B.A., Ph.D., D.Sc.(BT)
Assistant Professor,
Department of Animal Health & Management
Alagappa University, Karaikudi - 630 003.
Tamil Nadu, India.


Dr. S. GOWRISHANKAR
Assistant Professor
Department of Biotechnology
Science Campus
Alagappa University
Karaikudi - 630 003.

9. Concepts of Biotechnology (It is newly introduced Course)
10. Applications of Biotechnology in Society (It is newly introduced Course)

17. Resolved to have the following Core Courses for M.Sc. Biotechnology

SEMESTER I

- 1 Biochemistry (It is the Core Course of previous Curriculum, the content was modified)
- 2 Microbiology (It is the Core Course of previous Curriculum, the content was modified)
- 3 Practical I (Covering CC1 and CC2) - It is the Core Course of previous Curriculum, the content was modified)

SEMESTER II

- 4 Molecular Genetics (It is the Core Course of previous Curriculum, the content was modified)
- 5 Plant and Animal Biotechnology (It is the Core Course of previous Curriculum, the content was modified)
- 6 Practical II (Covering CC4 and CC5) (It is the Core Course of previous Curriculum, the content was modified)

SEMESTER III

- 7 Bioprocess Technology (It is the Core Course of previous Curriculum, the content was modified)
- 8 Immunology (It is the Core Course of previous Curriculum, the content was modified)
- 9 Bioinformatics (It is the Core Course of previous Curriculum but content is modified)
- 10 Practical - III (Covering CC7, CC8, CC9) It is the Core Course of previous Curriculum the content was modified)

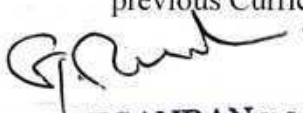
SEMESTER IV

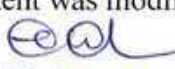
- 11 Stem cell technology (It is newly introduced)
- 12 Genomics and Proteomics (It is newly introduced)
- 13 Project Work (It is the Core Course of previous Curriculum, the content was modified)

18. Resolved to have the following 10 Discipline Specific Elective Courses in the first 2 semesters

SEMESTER I

- 1 Bioinstrumentation/ Cell signaling (It is the Discipline Specific Elective Course of previous Curriculum, the content was modified)


Dr. G. MANIGANDAN Ph.D., SETNET
 Assistant Professor and Head
 PG & Research Department of Biotechnology,
 J.J. College of Arts and Science (Autonomous)
 Tiruchirappalli - 622 422


Dr. S. SIVARAMAKRISHNAN
 PROFESSOR & HEAD
 DEPARTMENT OF BIO TECHNOLOGY
 SCHOOL OF BIOTECHNOLOGY & GENETIC ENGINEERING
 BHARATHIDASAN UNIVERSITY
 TIRUCHIRAPPALLI - 620 024


Dr. V. NITHYA, M.Sc.(B), M.Sc.(B), M.Phil., PGDBL, M.B.A., Ph.D., Assistant Professor
 Department of Biotechnology
 Science Campus
 Alagappa University
 Karaikal - 605 003.
 Tamil Nadu, India.

- 2 Enzyme Technology/ Diagnostic Biotechnology (It is the Skill enhancement Course of previous Curriculum but content is different)

SEMESTER II

- 3 Virology/ Medical Bacteriology **(It is the newly introduced course)**
- 4 Environmental Biotechnology /Pharmaceutical Technology / (It is the Core Course of previous Curriculum, the content was modified)

SEMESTER III

- 5 Research methodology (It is the Core Course of previous Curriculum, the content was modified)
- 6 Oncology **(It is the newly introduced course)**

19 Resolved to offer the following skill enhancement courses

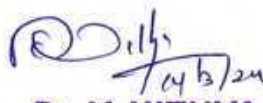
- 1 Genetic engineering (It is the Core Course of previous Curriculum, the content was modified)
- 2 Food technology **(It is the newly introduced course)**
- 3 Nanobiotechnology (It is the skill enhancement Course of previous Curriculum, the content was modified)
- 4 Bioethics, Biosafety, IPR & System Biology **(It is the newly introduced course)**

20 Resolved to introduce Internship for PG in third Semester (during the II Semester vacation).


14.03/2024

Dr. S. GOWRISHANKAR
Assistant Professor
Department of Biotechnology
Science Campus
Alagappa University
Karaikudi - 630 003


Dr. S. SIVARAMAKRISHNAN
PROFESSOR & HEAD
DEPARTMENT OF BIO TECHNOLOGY
SCHOOL OF BIOTECHNOLOGY & GENETIC ENGINEERING
BHARATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI-620 024


14/3/24

Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT),
M.Sc.(BIM), M.Phil., PEDB, M.B.A., Ph.D., D.Sc.(BT)
Assistant Professor
Department of Biotechnology
Science Campus
Alagappa University
Karaikudi - 630 003
Tamil Nadu, India.


Dr. G. MANIGANDAN Ph.D., SET.NET
Assistant Professor and Head
PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422

J.J COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS), Pudukkottai.
DEPARTMENT OF BIOTECHNOLOGY

B.Sc., BIOTECHNOLOGY

Proposed Course Structure based on TANSCH and UGC - LOCF

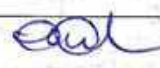
(Choice Based Credit System)

(Applicable for the Candidates admitted from academic Year 2023-2024 Onwards)

Sem	Part	Course Code	Course Title	Ins. Hrs/ Week	Credit	Exam Hrs	Marks		Total
							Int.	Ext.	
I	I	UIR3TL1/HL1/FL1	Language Course - I(Tamil/ Hindi/ French	6	3	3	25	75	100
	II	UIR3EL1	Language II - English	6	3	3	25	75	100
	III	UIR3BTCC1	Cell and Molecular Developmental Biology	5	5	3	25	75	100
		UIR3BTCC2P	Practical - I (Cell and Molecular Developmental Biology)	5	5	3	40	60	100
		UIR3BTDSE1:1/1:2	Biological Chemistry / Anatomy & Physiology	4	3	3	25	75	100
	IV	UIR3CSSEC1(NME)	Office Automation	2	2	3	25	75	100
		UIR3BTFC	Good Laboratory Practices (GLP)	2	2	3	25	75	100
	Total			30	23	-	-	-	700
II	I	U2R3TL2/HL2/FL2	Language Course - I(Tamil/ Hindi/ French	6	3	3	25	75	100
	II	U2R3EL2	Language II - English	6	3	3	25	75	100
	III	U2R3BTCC3	Genetics	5	5	3	25	75	100
		U2R3BTCC4P	Practical-II (Covering CC-3)	5	5	3	40	60	100
		U2R3BTDSE2	Microbiology	4	3	3	25	75	100
	IV	U2R3MASEC2	(NME2) - Quantitative Aptitude II	2	2	3	25	75	100
		U2R3BTSEC3:1/3:2	Marine Biotechnology/ Stem cell technology	2	2	3	25	75	100
	Total			30	23	-	-	-	700
III	I	U2R3TL3/HL3/FL3	Language Course - I(Tamil/ Hindi/ French	6	3	3	25	75	100
	II	U2R3EL3	Language II - English	6	3	3	25	75	100
	III	U3R3BTCC5	Immunology and Immunotechnology	5	5	3	25	75	100
		U3R3BTCC6P	Practical - III (Covering CC5)	5	5	3	40	60	100
	IV	U3R3BTDSE3:1/3:2	Bioinstrumentation/ Bioresource technology	4	3	3	25	75	100
		U3R3VE	Value education	2	2	3	25	75	100
		U3R3BTSEC4:1/4:2	Aquatic Biotechnology/ Vermitechnology	2	2	-	25	75	100
	Total			30	23	-	-	-	700


Dr. G. MANIGANDAN Ph.D., M.Sc., M.Tech.,
 Assistant Professor and Head

PG & Research Department of Biotechnology
 J. College of Arts and Science (Autonomous)
 Pudukkottai - 622 422


Dr. S. SIVARAMAKRISHNAN M.Sc., M.Tech.,
 PROFESSOR & HEAD
 DEPARTMENT OF BIO
 TECHNOLOGY
 J. College of Arts and Science (Autonomous)
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IV	I	U4R3TL4/HL4/FL4	Language Course - IV (Tamil/ Hindi/ French	5	3	3	25	75	100
	II	U2R3EL4	Language IV - English	5	3	3	25	75	100
	III	U4R3BTCC7	Genetic Engineering	5	5	3	25	75	100
		U4R3BTCC8P	Practical - IV (Covering CC7)	5	5	3	40	60	100
		U4R3BTDSE4:1/4:2	Bioinformatics and Biostatistics/ Bioethics and Biosafety	4	3	3	25	75	100
		U4R3BTSEC5:1/5:2	Bromatology/II/ Food safety & Quality control	2	2	3	25	75	100
	IV	U4R3BTSEC6:1/6:2	Mushroom Technology/ Biofertilizers	2	2	3	25	75	100
		U4R3ES	Environmental Studies	2	2	3	25	75	100
		Total			30	25	-	-	-

700

V	III	U5R3BTCC9	Plant Biotechnology	5	5	3	25	75	100
		U5R3BTCC10	Animal Biotechnology	5	4	3	25	75	100
		U5R3BTCC11	Industrial Biotechnology	5	4	3	25	75	100
		U5R3BTCC12P	Practical - V (Covering CC9,CC10 & CC11)	5	4	3	40	60	100
		U5R3BTDSE5:1/ 5:2	Cancer Biology/ Enzymology	5	3	3	25	75	100
		U5R3BTDSE6:1/ 6:2	Gene Therapy/ Bioenterpreneurship	5	3	3	25	75	100
	IV	U5R3BTINT	Internship	-	2	-	25	75	100
Total				30	25	-	-	-	700

VI	III	U6R3BTCC13	Environmental Biotechnology	5	4	3	25	75	100
		U6R3BTCC14P	Practical VI (Covering CC13)	5	4	3	25	75	100
		U6R3BTCC15PW	Project work	6	4	-	40	60	100
		U6R3BTDSE7:1/ 7:2	Nanobiotechnology/ Forensic Science	5	3	3	25	75	100
		U6R3BTDSE8:1/ 8:2	Agricultural Biotechnology/Genomics and proteomics ✓	4	3	3	25	75	100
	IV	U5R3BTSEC7:1/7:2	Pharmaceutical Biotechnology/ Diagnostic Biotechnology	3	2	-	-	-	100
		U5R3BTGS	Gender Studies ✓	2	1	-	-	-	100
		-	Extension Activities		1				
Total				30	22	-	-	-	700
Grand Total					141				4300

Dr.G.MANIGANDAN Ph.D.,SET,NET
Assistant Professor and Head
PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422

Dr.S.SIVARAMAKRISHNAN
PROFESSOR & HEAD
DEPARTMENT OF BIO TECHNOLOGY
SCHOOL OF
BHA
Tik

Dr. V. NITHYA, M.Sc.(BC),M.Sc.(BT),
M.Sc.(BI),M.Phil., PGDIP in B.A.,Ph.D.,D.Sc.(BT),
Assist

Tamil Nadu, India

Dr.S. GOVINDARAJAN
Assistant Professor
Department of Biotechnology
Sri Lanka Open University
Karaikudi - 630 00

CC-Core Course / AC – Allied Course / NME – Non Major Elective/ DSE – Discipline Specific Elective

Total Credit – 141/ Total Marks – 4300

Extension Activities Shall Be Outside the Instruction Hours.

CORE COURSES - (CC)

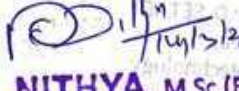
- 1) Cell and Molecular Developmental Biology
- 2) Practical I - Cell and Molecular Developmental Biology
- 3) Genetics
- 4) Practical II - Covering CC3
- 5) Immunology and Immunotechnology
- 6) Practical III - Covering CC5
- 7) Genetic Engineering
- 8) Practical IV - Covering CC7
- 9) Plant Biotechnology
- 10) Animal Biotechnology
- 11) Industrial Biotechnology
- 12) Practical IV - Covering CC9,10,11
- 13) Environmental Biotechnology
- 14) Practical V - Covering CC13
- 15) Project work

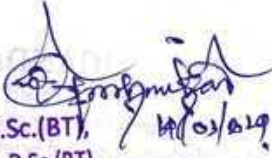
DISCIPLINE SPECIFIC ELECTIVE - (DSE)

1. Biological Chemistry
2. Anatomy & Physiology
3. Microbiology
4. Bioinstrumentation
5. Bioresource Technology
6. Bioinformatics & Biostatistics
7. Bioethics and Biosafety
8. Cancer Biology
9. Enzymology
10. Gene therapy
11. Bioenterpreneurship
12. Nanobiotechnology
13. Agricultural Biotechnology
14. Genomics and Proteomics
15. Forensic Science


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PG & Research Department of Biotechnology
J.J. College of Arts and Science (Autonomous)
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Dr. S. SIVARAMAKRISHNAN M.Sc.(BI), M.Phil., PGDBI, M.B.A., Ph.D., D.Sc.(BT)
PROFESSOR & HEAD
DEPARTMENT OF BIOTECHNOLOGY
SCHOOL OF BIOTECHNOLOGY
BHARATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI - 620 024


Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT),
M.Sc.(BI), M.Phil., PGDBI, M.B.A., Ph.D., D.Sc.(BT)
Assistant Professor,
Department of Animal Health & Management,
Alagappa University, Karaikudi - 630 003
Tamil Nadu, India.


Dr. S. GOWRISHANKAR
Assistant Professor
Department of Biotechnology
Alagappa University
Karaikudi - 630 003

SKILL ENHANCEMENT COURSE - (SEC)

1. Office Automation - from CS Department
2. Quantitative Aptitude II - from Maths Department
3. Marine Biotechnology
4. Stem cell technology
5. Aquatic Biotechnology
6. Vermitechnology
7. Bromotology
8. Food Safety & Quality control
9. Mushroom Technology
10. Biofertilizers
11. Pharmaceutical Biotechnology
12. Dignostic Biotechnology

FOUNDATION COURSE

1. Good Laboratory Practices (GLP)

NON-MAJOR ELECTIVES (NME)

FIRST SEMESTER

1. Food and Nutrition
2. Herbal Medicine
3. Public Health and Hygiene
4. Environment Management in Industries
5. Good Laboratory Practices
6. Organic Farming and Health Management
7. Biotechnology for Society
8. Computational Biology

SECOND SEMESTER

9. Concepts of Biotechnology
10. Applications of Biotechnology in Society


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Assistant Professor and Head
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J.J. College of Arts and Science (Autonomous)
Pudukkottai - 622 422


Dr. S. SIVARAMAKRISHNAN
PROFESSOR & HEAD
DEPARTMENT OF BIOTECHNOLOGY
J.J. COLLEGE OF ARTS AND SCIENCE
TIRUCHIRAPPALLI - 620 024


Dr. V. NITHYA, M.Sc.(BC), M.Sc.(BT),
M.Sc.(BI), M.Phil., PGDBI, M.B.A., Ph.D., D.Sc.(BT)
Assistant Professor,
Department of Animal Health & Management,
Alagappa University, Karaikudi - 630 003.
Tamil Nadu, India.


Dr. S. GOWRISHANKAR
Assistant Professor
Department of Biotechnology
Science Campus
Alagappa University
Karaikudi - 630 003.

J.J COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS), PUDUKKOTTAI
DEPARTMENT OF BIOTECHNOLOGY
M.Sc., BIOTECHNOLOGY

Proposed Course Structure based on TANSCH and UGC - LOCF
(Choice Based Credit System)

(Applicable for the Candidates Admitted from Academic Year 2023-2024 Onwards)

Sem	Course Code	Course Title	Hrs/ Week	Credit	Exam Hrs	Marks		
						Int.	Ext.	Total
I	PIR3BTCC1	Biochemistry	7	5	3	25	75	100
	PIR3BTCC2	Microbiology	7	5	3	25	75	100
	PIR3BTCC3P	Practical - I (Covering CC1,CC2)	6	4	6	40	60	100
	PIR3BTDSE1:1/1:2	Bioinstrumentation / Cell Signaling	5	3	3	25	75	100
	PIR3BTDSE2:1/2:2	Enzyme Technology/ Diagnostic Biotechnology	5	3	3	25	75	100
Total			30	20	-	-	-	500
II	P2R3BTCC4	Molecular Genetics	6	5	3	25	75	100
	P2R3BTCC5	Plant and Animal Biotechnology	6	5	3	25	75	100
	P2R3BTCC6P	Practical -II (Covering CC4,CC5)	6	4	6	40	60	100
	P2R3BTDSE3:1/3:2	Virology / Medical Bacteriology	4	3	3	25	75	100
	P2R3BTDSE4:1/4:2	Environmental Biotechnology / Pharmaceutical Technology /	4	3	3	25	75	100
	P2R3BTSEC1:1/1:2	Genetic Engineering / Food Technology	4	2	3	25	75	100
Total			30	22	-	-	-	600
III	P3R3BTCC7	Bioprocess Technology	6	5	3	25	75	100
	P3R3BTCC8	Immunology	5	5	3	25	75	100
	P3R3BTCC9	Bioinformatics	5	5	3	25	75	100
	P3R3BTCC10P	Practical -III (Covering CC7,CC8 & CC9)	6	5	6	40	60	100
	P3R3BTDSE5:1/5:2	Research Methodology/ Oncology	4	3	3	25	75	100
	P3R3BTSEC2:1/2:2	Nano Biotechnology/Bioethics,Biosafety IPR and System Biology	4	2	3	25	75	100
	P3R3BTINT	Internship	-	3	-	-	-	100
Total			30	28	-	-	-	700
IV	P4R3BTCC11	Stem cells technology	6	5	3	25	75	100
	P4R3BTCC12	Genomics and Proteomics	6	5	-	-	-	100
	P4R3BTCC13PW	Project Work	18	10	3	-	-	100
Total			30	20	-	-	-	300
Grand Total			120	90	-	-	-	2100

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 TIRUCHIRAPPALLI - 620 024

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 Alagappa University
 Karaikudi - 630 003