


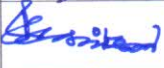

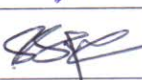
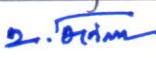



HINDUSTHAN COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)
COIMBATORE-641 028
CONTROLLER OF EXAMINATIONS

BOARD OF STUDIES MEETING IN BIOTECHNOLOGY
(for the Academic year 2020-2021)
Attendance Report

Date: 30.07.2021

Time: 10.00 AM – 01.00 PM

Venue: PG Biotechnology Lab

| | Name | Designation | Signature |
|-------------------------------|-----------------------------|------------------------------|---|
| Chairman | Dr. G. RAJALAKSHMI | Professor and Head |  |
| Members (Internal) | 1. Dr. P. SENTHILKUMAR | Associate Professor |  |
| | 2. Dr. S. G. ANTONY GODSON. | Associate Professor |  |
| | 3. Dr. S. GANESH | Assistant Professor |  |
| | 4. Dr. U. SURIYAKALAA | Assistant Professor |  |
| | 5. Dr. P. KARTHIGA | Assistant Professor |  |
| | 6. Dr. D. BHARATHI | Assistant Professor |  |
| | 7. Dr. A. MANJU | Assistant Professor |  |
| External (Subject Experts) | 1. Dr. K. ABDHUL | Associate Professor and Head | Online |
| | 2. Dr. P. ARUN | Associate Professor | Online |
| Industrial Expert | Dr. S. JEGAN | Scientist | Online |
| Alumni | Dr. D. JAYASHEELA | Associate Professor | Online |
| University Nominee | Dr. C. DEEPA | Assistant Professor and Head | Online |



MINUTES OF BOARD OF STUDIES MEETING

The following points were discussed in the **BOARD OF STUDIES** meeting held on 30.07.2021 from 10.00 am to 02.00 pm in the Department of **BIOTECHNOLOGY** through online/offline mode.

1. Chairman of Biotechnology Department, Dr. G. Rajalakshmi welcomed and introduced the Internal Members, External Members - Subject Expert, Industrial Expert, Alumni and University Nominee.
2. Dr. G. Rajalakshmi, Chairman explained all the syllabus and revisions carried out from 2019-2020, 2020-2021 and 2021-2022 of UG, 2020-2021 and 2021-2022 of PG and 2021 – 2022 for Diploma in Microbial Biotechnology to the Board members.
3. Chairman explained about Program Educational Objectives (PEO), Program Outcomes (PO), Program Specific Outcomes(PSO) and Mapping of Outcomes to the Board members
4. Chairman explained about the following points to the Board Members
 - Changes made in the syllabus and explained about the Distribution of Marks (Internal and External) for UG, PG and Diploma and explained about the Introduction of Fast Track System for UG and PG students admitted from 2021 – 2022 and onwards.
 - Introduction of Open Electives, Institutional Training, Internship, Project, Student Development Report, Extension Activity and Self Study Course for UG Programme and Introduction of Open Electives, Institutional Training, Internship, Mini Project, Extension Activity and Student Development Report for PG programme
5. Principal of the College entered the Biotechnology Board Meeting at 11.00 am and welcomed the Board members. He threw a light on the New Scheme introduced for both UG and PG programme during 2021-2022 and also explained about the introduction of Fast track system and its benefits and Student Development Report for UG and PG programme.
6. **University Nominee Dr. C. Deepa** suggested confirming the TANSHE scheme for UG programme as the Language and English Courses were restricted to First Year Students in 2021 -2022 Scheme. She also suggested bringing about Common Elective papers for Biosciences Departments. She insisted on elaborating topics in the Unit V – Metabolism of Biochemistry (21BTU08), Analytical and Preparatory Centrifuge in Bioinstrumentation (21BTU05) and also to remove trp operon topic from Unit V of Molecular Biology (20BTU10) and Gene rearrangement technique in Immunology (20BTU14), Introduction of Aminoacids in Unit III of Biochemistry and Metabolism (21BTP03), to separate waste management as Toxic and Non toxic in Unit III of Environmental Biotechnology (20BTP23). Teaching methodology and hours allotment for Practicals has to be checked and updated.
7. **The Subject Experts Dr. K. Abdhul and Dr. P. Arun** suggested having a look into the Fast Track System because it has a direct impact on Staff Workload for the IV and VI semester of PG and UG respectively. Also they insisted allowing student to opt any NPTEL Course during their period of study. They informed to include Evidences for DNA as Genetic material instead of transduction, transformation and conjugation in Molecular Biology (20BTU10), Introduction of Upstream Process in Fermentation Technology in Unit II/III (19BTU26), Growth Curve, Preservation and Maintenance of Microbes in Unit II of Applied Microbiology (21BTP02), Recent Developments to be included in Unit III of Biotechniques (20BTP18B). **Dr. K. Abdhul** discussed about introducing Human Physiology (20BTU26C) prior to introduction Human Pathology (20BTU15B) in elective, Introduce Shuttle vectors in Unit II of Genetic Engineering (21BTP09). **Dr. P. Arun** suggested including a topic on Infringement in II Unit of IPR, Biosafety and Bioethics


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- (19BTU20). He also suggested on introducing a course on Clinical Research and Data Management as it may promote placement opportunities.
8. **The Industrial Expert Dr. S. Jegan** suggested including topics related to recent trends and providing knowledge on Molecular Tools and Introduction to Soil Microbiology. Along with subject experts he insisted on promoting Elective papers to be an Open Choice and not to restrict to two papers as the syllabus may outdate. He suggested to include HPLC/HPTLC in Bioinstrumentation (21BTU05), Buffer topic in Unit II of theory and Practical of Allied II/Biochemistry (21BTU08), Sterilization Techniques, segregate Unit V topics based on organism causing infection in Microbiology (20BTU09/21BTU06), Gene rearrangement technique in Immunology (20BTU14), Shuffling of Units and rearrangement in Molecular Biology (20BTU10), introduction of Drug Delivery methods and Gene Therapy, DNA based diagnostics in Unit IV and V of Clinical Biotechnology (20BTU15A). Addition of Green Nanotechnology in Bio-nanotechnology (19BTU23B) and climate change in Environmental Biotechnology (19BTU27); Example for Bio-pesticide in Unit III of Applied Microbiology (21BTP02), Introduce mRNA based vaccines in Unit V and shuffle the Units I to V of Genetic Engineering (21BTP09), Include Marker Assisted Breeding Techniques in Unit III of Plant Biotechnology (21BTP10), Include GUS assay in Practical V - Plant Biotechnology (21BTP12), Include RT PCR technique in Unit IV of Tools in Biotechnology (20BTP24B).
9. **The Alumni Dr. D. Jayasheela** suggested that based on major percentage of students choosing an elective, the course may be opted as an elective for the respective semester. Teaching methodology and hours allotment for Practicals has to be checked and updated.

Based on the discussions made above, the following resolutions were passed

10. The Syllabi of V & VI semesters of the B. Sc. Biotechnology Programme for the students admitted during the academic year 2019-2020 and onwards were approved.
- (i) It is resolved to modify the existing syllabus of Recombinant DNA Technology (19BTU18) in the units I to V from the academic year of 2019-2020 and onwards
 - (ii) It is resolved to modify the existing syllabus of Plant Biotechnology (19BTU19) units I to V from the academic year of 2019-2020 and onwards
 - (iii) It is resolved to modify the existing syllabus of IPR, Biosafety and Bioethics (19BTU20) units I and V from the academic year of 2019-2020 and onwards
 - (iv) It is decided to introduce the entire syllabus of Practical V- Recombinant DNA Technology (19BTU21) from the academic year of 2019-2020 and onwards
 - (v) It is decided to introduce the entire syllabus for Practical VI – Plant Biotechnology (19BTU22) from the academic year of 2019-2020 and onwards
 - (vi) It is resolved to modify the existing syllabus of Bioinformatics (19BTU23A) units I and V from the academic year of 2019-2020 and onwards
 - (vii) It is resolved to introduce the entire syllabus for Bio-nanotechnology (19BTU23B) from the academic year of 2019-2020 and onwards
 - (viii) It is resolved to modify the existing syllabus of Animal Biotechnology (19BTU25) units I and V from the academic year of 2019-2020 and onwards
 - (ix) It is resolved to modify the existing syllabus of Fermentation Technology (19BTU26) units I and III from the academic year of 2019-2020 and onwards
 - (x) It is resolved to modify the existing syllabus of Environmental Biotechnology (19BTU27) units I to V from the academic year of 2019-2020 and onwards
 - (xi) It is resolved to modify the existing syllabus of Diagnostic Tools (19BTU28A) units I to



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- V from the academic year of 2019-2020 and onwards
- (xii) It is resolved to introduce the entire syllabus for Cancer Biology (19BTU28B) from the academic year of 2019-2020 and onwards
 - (xiii) It is resolved to introduce the entire syllabus for Practical VII – Animal Biotechnology and Fermentation Technology (19BTU29) from the academic year of 2019-2020 and onwards
 - (xiv) It is resolved to introduce the entire syllabus for Practical VIII – Environmental Biotechnology (19BTU30) from the academic year of 2019-2020 and onwards
11. The Syllabi of III & IV semesters of the UG & PG programme for the students admitted during the academic year 2020-2021 and onwards were approved.
- (i) It is resolved to modify the existing syllabus of Microbiology (20BTU09) in the units I, II and IV from the academic year of 2020-2021 and onwards
 - (ii) It is resolved to modify the existing syllabus of Molecular Biology (20BTU10) in the units I to V from the academic year of 2020-2021 and onwards
 - (iii) It is resolved to modify the existing syllabus of Practical III – Microbiology and Molecular Biology (20BTU12) from the academic year of 2020-2021 and onwards
 - (iv) It is resolved to modify the existing syllabus of Immunology (20BTU14) in the units of II to V from the academic year of 2020-2021 and onwards
 - (v) It is resolved to introduce the entire syllabus for Clinical Biotechnology (20BTU15A) from the academic year of 2020-2021 and onwards
 - (vi) It is resolved to introduce the entire syllabus for Human Pathology (20BTU15B) from the academic year of 2020-2021 and onwards
 - (vii) It is resolved to introduce the entire syllabus for Practical IV – Immunology and Clinical Biotechnology (20BTU17) from the academic year of 2020-2021 and onwards
 - (viii) It is resolved to modify the existing syllabus of Immunology and Immunotechnology (20BTP15) in the unit V from the academic year of 2020-2021 and onwards
 - (ix) It is resolved to modify the existing syllabus of Animal and Pharmaceutical Biotechnology (20BTP16) in the units III to V from the academic year of 2020-2021 and onwards
 - (x) It is resolved to modify the existing syllabus of Plant Biotechnology (20BTP17) in the units I to V from the academic year of 2020-2021 and onwards
 - (xi) It is resolved to modify the existing syllabus of Developmental Biology and Behavioural Studies (20BTP18A) in the unit IV from the academic year of 2020-2021 and onwards
 - (xii) It is resolved to introduce the entire syllabus for Biotechniques (20BTP18B) from the academic year of 2020-2021 and onwards
 - (xiii) It is resolved to introduce the entire syllabus for Stem Cell Biology (20BTP18C) from the academic year of 2020-2021 and onwards
 - (xiv) It is resolved to modify the existing syllabus of Practical VI - Immunology and Immunotechnology (20BTP20) from the academic year of 2020-2021 and onwards
 - (xv) It is resolved to modify the existing syllabus of Practical VII - Animal and Pharmaceutical Biotechnology (20BTP21) from the academic year of 2020-2021 and onwards
 - (xvi) It is resolved to modify the existing syllabus of Practical VII – Plant Biotechnology (20BTP22) from the academic year of 2021-2022 and onwards
 - (xvii) It is resolved to modify the existing syllabus of Environmental Biotechnology and Bio-nanotechnology (20BTP23) in the unit III from the academic year of 2020-2021 and onwards



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- (xviii) It is resolved to introduce the entire syllabus for Bioinstrumentation (20BTP24A), Tools in Biotechnology (20BTP24B) and Medical Biotechnology (20BTP24C) from the academic year of 2020-2021 and onwards
- (xix) It is resolved to modify the existing syllabus of Practical IX - Environmental Biotechnology and Bio-nanotechnology (20BTP25) in the unit III from the academic year of 2020-2021 and onwards

12. The Syllabi of I & II semesters of the UG & PG programme for the students admitted during the academic year 2021-2022 and onwards were approved.

- (i) It is resolved to modify the existing syllabus of Cell Biology and Genetics (21BTU01) in the unit IV from the academic year of 2021-2022 and onwards
- (ii) It is resolved to modify the existing syllabus of Practical I – Cell Biology and Genetics (21BTU03) from the academic year of 2021-2022 and onwards
- (iii) It is resolved to introduce the entire syllabus of Bioinstrumentation (21BTU05) in the from the academic year of 2021-2022 and onwards. This paper is a combination of both theory and practical. Examination will be conducted as per the following pattern - Theory 70 + 30 and Practical 60 + 40. 50% weightage would be taken from Theory and 50% weightage would be taken from Practical and both summed up to 100 marks.

| | | | | | | | | | |
|-----|---------|-----|---|---|---|---|----|----|-----|
| III | 21BTU05 | DSC | CORE III – Bioinstrumentation - Theory | 4 | 3 | 3 | 15 | 35 | 100 |
| | | | CORE III – Bioinstrumentation – Practical | | 2 | 5 | 15 | 35 | |

- (iv) It is resolved to modify the existing syllabus of Microbiology (21BTU06) in the units I to V from the academic year of 2021-2022 and onwards
- (v) It is resolved to modify the existing syllabus of Biochemistry (21BTU07) in the units IV and V from the academic year of 2021-2022 and onwards
- (vi) It is resolved to introduce the entire syllabus of Practical III – Microbiology (21BTU08) from the academic year of 2021-2022 and onwards
- (vii) It is resolved to modify the existing syllabus of Practical IV – Biochemistry (21BTU09) from the academic year of 2021-2022 and onwards
- (viii) It is resolved to modify the existing syllabus of Cell and Molecular Biology (21BTP01) in the units I to V from the academic year of 2021-2022 and onwards
- (ix) It is resolved to modify the existing syllabus of Applied Microbiology (21BTP02) in the units I, II, III and V from the academic year of 2021-2022 and onwards
- (x) It is resolved to introduce the entire syllabus of Biochemistry and Metabolism (21BTP03) from the academic year of 2021-2022 and onwards
- (xi) It is resolved to modify the existing syllabus of Practical II – Applied Microbiology (21BTP05) from the academic year of 2021-2022 and onwards
- (xii) It is resolved to introduce the entire syllabus of Practical III - Biochemistry and Metabolism (21BTP06) from the academic year of 2021-2022 and onwards
- (xiii) It is resolved to modify the existing syllabus of Developmental Biology and Behavioural Studies (21BTP07A) in the unit IV from the academic year of 2021-2022 and onwards

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- (xiv) It is resolved to introduce the entire syllabus of Bioethics and Biosafety (21BTP07B) from the academic year of 2021-2022 and onwards
- (xv) It is resolved to modify the existing syllabus of Genetic Engineering (21BTP09) in the units I to V from the academic year of 2021-2022 and onwards
- (xvi) It is resolved to modify the existing syllabus of Plant Biotechnology (21BTP10) in the units I to V from the academic year of 2021-2022 and onwards
- (xvii) It is resolved to modify the existing syllabus of Research methodology and Biostatistics (21BTP11) in the units IV and V from the academic year of 2021-2022 and onwards
- (xviii) It is resolved to introduce the entire syllabus of R programming for Biologists (21BTP12) from the academic year of 2021-2022 and onwards
- (xix) It is resolved to modify the existing syllabus of Practical V – Plant Biotechnology (21BTP14) from the academic year of 2021-2022 and onwards
- (xx) It is resolved to introduce the entire syllabus of Practical VI - R programming for Biologists (21BTP15) from the academic year of 2021-2022 and onwards
13. The Syllabi of I & II semesters of the Diploma in Microbial Biotechnology programme for the students admitted during the academic year 2021-2022 and onwards were approved.
- (i) It is resolved to introduce the entire syllabus of Techniques in Microbial Biotechnology (21MTD01) from the academic year of 2021-2022 and onwards
- (ii) It is resolved to introduce the entire syllabus of Microbial Nanotechnology and Industrial Biotechnology (21MTD02) from the academic year of 2021-2022 and onwards
- (iii) It is resolved to introduce the entire syllabus of Practical I - Techniques in Microbial Biotechnology (21MTD03) from the academic year of 2021-2022 and onwards
- (iv) It is resolved to introduce the entire syllabus of Practical II - Microbial Nanotechnology and Industrial Biotechnology (21MTD04) from the academic year of 2021-2022 and onwards
- (v) It is resolved to introduce the entire syllabus of Entrepreneurship Biotechnology (21MTD05) from the academic year of 2021-2022 and onwards
- (vi) It is resolved to introduce the entire syllabus of Food Microbiology (21MTD06) from the academic year of 2021-2022 and onwards
- (vii) It is resolved to introduce the entire syllabus of Practical III - Entrepreneurship Biotechnology (21MTD07) from the academic year of 2021-2022 and onwards
- (viii) It is resolved to introduce the entire syllabus of Practical IV – Food Microbiology (21MTD08) from the academic year of 2021-2022 and onwards





(Dr. G. RAJALAKSHMI)

Name & Signature of the Chairman (With seal)

Dr. G. RAJALAKSHMI
M.Sc., M.Phil., PGDBI., Ph.D., SET.,
Associate Professor and Head
PG & Research Dept. of Biotechnology
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Enclosures:

1. For I & II semester for the academic year 2021-22

B. Sc. Biotechnology

| S. No | Sem. | Subject code | Title of the subject |
|-------|------|--------------|--|
| 1 | I | 21BTU01 | Core I - Cell Biology and Genetics |
| 2 | I | 21BTU02 | Allied I - Chemistry |
| 3 | I | 21BTU03 | Core II - Practical I - Cell Biology and Genetics |
| 4 | I | 21BTU04 | Allied I - Practical I - Chemistry |
| 5 | I | 21GSU01 | Environmental Studies |
| 6 | I | 21BTUV01 | VAC – I/ Life Skills - I @ / SEC- Communicative English |
| 7 | I | 21BTUE01 | Open Elective – I |
| 8 | I | - | SDR- Student Development Report |
| 9 | I | - | Extension Activities NSS/NCC/SPORTS/YRC/SIS/SA |
| 10 | II | 21BTU05 | Core III - Bioinstrumentation |
| 11 | II | 21BTU06 | Core IV - Microbiology |
| 12 | II | 21BTU07 | Allied II - Biochemistry |
| 13 | II | 21BTU08 | Core V - Practical II - Microbiology |
| 14 | II | 21BTU09 | Allied II - Practical II- Biochemistry |
| 15 | II | 21BTUV02 | VAC – II / Life Skills - II @ / SEC - Language |
| 16 | II | 21BTU10 | Internship / Industrial Visit / Mini Project (Summer Course – 1) |
| 17 | II | 21BTUJ01 | Aptitude / Placement Training |

Diploma in Microbial Biotechnology

| S. No | Sem. | Subject code | Title of the subject |
|-------|------|--------------|---|
| 1 | I | 21MTD01 | Techniques in Microbial Biotechnology |
| 2 | I | 21MTD02 | Microbial Nanotechnology and Industrial Biotechnology |
| 3 | I | 21MTD03 | Practical I - Techniques in Microbial Biotechnology |
| 4 | I | 21MTD04 | Practical II - Microbial Nanotechnology and Industrial Biotechnology |
| 5 | II | 21MTD05 | Entrepreneurship Biotechnology |
| 6 | II | 21MTD06 | Food Microbiology |
| 7 | II | 21MTD07 | Practical III - Entrepreneurship Biotechnology |
| 8 | II | 21MTD08 | Practical IV – Food Microbiology |

M. Sc. Biotechnology

| S. No | Sem. | Subject code | Title of the subject |
|-------|------|--------------|--|
| 1 | I | 21BTP01 | Core I - Cell and Molecular Biology |
| 2 | I | 21BTP02 | Core II - Applied Microbiology |
| 3 | I | 21BTP03 | Core III - Biochemistry and Metabolism |
| 4 | I | 21BTP04 | Core IV - Practical I - Cell and Molecular Biology |
| 5 | I | 21BTP05 | Core V - Practical II - Applied Microbiology |
| 6 | I | 21BTP06 | Core VI - Practical III - Biochemistry and Metabolism |
| 7 | I | 21BTP07 | Elective – I / DSE-I |
| 8 | I | 21BTP08 | Internship / Institutional Training / Mini-Project |

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|----|----|----------|---|
| 9 | I | 21BTPJ01 | Aptitude / Placement Training |
| 10 | I | 21BTPE01 | Open Elective - I |
| 11 | I | 21BTPV01 | VAC-I |
| 12 | I | - | SDR – Student Development Record |
| 13 | II | 21BTP09 | Core VII - Genetic Engineering |
| 14 | II | 21BTP10 | Core VIII - Plant Biotechnology |
| 15 | II | 21BTP11 | Core IX - Research Methodology and Biostatistics |
| 16 | II | 21BTP12 | Core X - R Programming for Biologists |
| 17 | II | 21BTP13 | Core XI - Practical IV - Genetic Engineering |
| 18 | II | 21BTP14 | Core XII - Practical V - Plant Biotechnology |
| 19 | II | 21BTP15 | Core XIII - Practical VI - R Programming for Biologists |
| 20 | II | 21BTP16 | Internship / Institutional Training / Mini-Project / Extension Activity |
| 21 | II | 21BTPE02 | Open Elective - II |
| 22 | II | 21BTPJ02 | Online Courses |
| 23 | II | 21BTPJ03 | Aptitude / Placement Training |
| 24 | II | 21BTPV02 | VAC-II |

2. For III & IV semesters for the academic year 2020-21

B. Sc. Biotechnology

| S. No | Sem. | Subject code | Title of the subject |
|-------|------|--------------|--|
| 1 | III | 20BTU09 | Microbiology |
| 2 | III | 20BTU10 | Molecular Biology |
| 3 | III | 20BTU11 | Allied III - Biostatistics (MAT) |
| 4 | III | 20BTU12 | Practical V - Microbiology and Molecular Biology |
| 5 | III | 20BTU13 | Institutional Training |
| 6 | III | 20GSU02 | Environmental Studies |
| 7 | III | 20JOU07 | VAC-III |
| 8 | III | 20JOU08 | Aptitude / Placement Training |
| 9 | III | 20JOU09 | Online Classes |
| 10 | IV | 20BTU14 | Immunology |
| | IV | 20BTU15A | Elective I – Clinical Biotechnology |
| 11 | IV | 20BTU15B | Elective I – Human pathology |
| 12 | IV | 20BTU16 | Allied IV – Python Programming (CSC) |
| 13 | IV | 20BTU17 | Practical VI – Immunology and Clinical Biotechnology |
| 14 | IV | 20BTU18 | Allied IV: Practical VII – Programming using Python lab (CSC) |
| 15 | IV | 20GSU03 | Skill Based - Internet Security |
| 16 | IV | 20GSU04 | Extension Activity* |
| 17 | IV | 20JOU10 | VAC - IV |
| 18 | IV | 20JOU11 | Aptitude / Placement Training |
| 19 | IV | 20JOU12 | Online Classes |

M. Sc. Biotechnology

| S. No | Sem. | Subject code | Title of the subject |
|-------|------|--------------|---------------------------------|
| 1 | III | 20BTP15 | Immunology and Immunotechnology |

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