

KARPAGAM ACADEMY OF HIGHER EDUCATION

COIMBATORE – 641 021

2019- 2020

Minutes of the meeting of the Board of Studies in Microbiology (UG, PG, M.Phil & PhD) held on 08.04.2019 at 10.00 am in the Microbiology Department at Karpagam Academy of Higher Education.

Members Present:

1.Dr.B.V.Pradeep,

Associate Professor & Head,
Dept of Microbiology,
Karpagam Academy of Higher Education,
Coimbatore-641021.

2. Dr.R.Usha,

Associate Professor,
Dept of Microbiology,
Karpagam Academy of Higher Education,
Coimbatore-641021.

3.Dr.M.Kulandhaivel,

Associate Professor,
Dept of Microbiology,
Karpagam Academy of Higher Education,
Coimbatore-641021.

4.Dr.N.O.Gopal,

Professor,
Dept of Microbiology,
TamilNadu Agriculture University,
Coimbatore- 641003.

5. Dr. PreethiMarimuthu

CEO,
Tropical Biosciences Pvt Ltd,
115/3C Pollachi Main Road,
Othakkalmandapam,
Coimbatore – 641032.

The Chairperson welcomed the members of the Board. Leave of absence granted to Mr.M.Mani, Director, Microbiological Laboratory, RS Puram, Coimbatore 641 002. The Board carefully scrutinized the draft syllabus and after detailed discussion the following resolutions were passed.

Agenda: 1

1. To consider and approve the Regulations and Syllabus for B.Sc Microbiology programme for the academic year 2019-2020.

Resolution: 1

- 1.Resolved to approve the Regulations and Syllabus for B.Sc Microbiology programme and it comes into effect from 2019-2020.(Approved Syllabus given in Annexure-II).

Agenda: 2

1. To consider and approve the Regulations and Syllabus for M.Sc Microbiology programme for the academic year 2019-2020.

Resolution: 2

1. Resolved to approve the Regulations and Syllabus for M.Sc Microbiology programme and it comes into effect from 2019-2020 (Approved Syllabus given in Annexure-II).

Agenda: 3

1. To consider and approve the Regulations and Syllabus for M.Phil&Ph.D Microbiology programme.

Resolution: 3

- 1.Resolved to approve the Regulations and Syllabus for M.Phil&Ph.D Microbiology programme and it comes into effect from 2019-2020 (Approved Syllabus given in Annexure-III).

There has been minor changes carried out in 2018 - 2019 Bsc&Msc Microbiology syllabus. In addition to the UGC model curriculum we have added few topics in different courses of BSc Microbiology 2019-2020 based on the employability, entrepreneurship and skill development..

Suggestions given by members to improve the syllabus to meet the present and future challenges in the field are follows.

B.Sc., Microbiology

1. The content Actinobacteria is shifted from Unit-III to Unit-II. Techniques involved in algal cell cultivation and preservation are included in Introduction to Microbiology and Microbial Diversity (19MBU101).
2. Unit-I is replaced by Unit-II and Unit-IV was divided into Unit-III (Proteins) and IV (enzymes) of Basic Biochemistry (19MBU103)
3. Haemocytometer is added to Bacteriology Practical (19MBU112)

4. The concepts of molarity and normality are added to Basic Biochemistry Practical (19MBU113)
5. DNA replication, transcription and translation are shifted from Unit-I to Unit-III in Microbial Genetics (19MBU203).
6. Effect of aeration on growth of *E.coli* is included in Microbial Physiology and Metabolism Practical (19MBU212)
7. Microbial production of DHA, chitinase, Probiotics (*Lactobacillus*, *Bacillus* and Yeast) are included in Industrial Microbiology (19MBU303)
8. Isolation of microbes from saline water and salinesoil is added to Environmental Microbiology Practical (19MBU311).
9. Study the growth curve: Haemocytometer; Glycol stock and stability of vials at different time and Assess quality of probiotics in tablets and nutritional supplements are included in Industrial Microbiology Practical (19MBU313).
10. CRISPR tool is added to Unit-V of Recombinant DNA Technology (19MBU403).
11. Soil nutrients, plant growth, nitrogen cycle, role of phosphate in plant growth and yield and general introduction of mycorrhizae, potash and zinc solubilizing microbes, bio nematicide, *Pseudomonas*, *Bacillus*, *Streptomyces* are included in Biofertilizers and Biopesticides (19MBU404A).
12. Isolation and identification of potash solubilizing microbes, Isolation and identification of zinc solubilizing microbes, quantification, infectivity and potential of phosphate solubilizing bacteria are included in Biofertilizers and Biopesticides Practical (19MBU414A).
13. Principles of Filtration (micro and ultra) is added to Unit –V of Instrumentation and Biotechniques (19MBU503A)
14. Gene transfer techniques, biotransformation of antibiotics and basic cloning steps and product development are included in Microbial Biotechnology (19MBU504A).
15. Storage stability, Cell Viability test, enzyme estimation test and Study the stability of various formulation- powder, liquid, cream (additives, carriers at different pH, moisture, temperature and shelf life) are included in Microbial Biotechnology Practical (19MBU514A).
16. VAM, potash solubilizers added to Unit-IV of Microbes in Sustainable Agriculture and Development –(19MBU602B)
17. CRISPR is added to Unit-II of Molecular Biology (19MBU603B)

18. Screening of bacterial isolates for PHB production using 'Sudan black B' method, enumeration of soil microorganisms: Bacteria, fungi and actinobacteria, urea decomposers and nitrate utilizers are included in Microbes in Sustainable Agriculture and Development –Practical (19MBU612B)
19. Estimation of protein by Lowery's method is added to Molecular Biology - Practical (19MBU613B).
20. Advanced Biochemistry (18MBU303) and the corresponding practical course Advanced Biochemistry Practical (18MBU313) were changed as Biochemistry II and Biochemistry II Practical and were placed in Semester II as 19MBU201 and 19MBU211.

B.Sc., Microbiology programme consist of 60 courses. There is a syllabus changes in 21 courses. The percentage of changes in the syllabus is 35 % for UG programme from the academic year 2019–2020.

M.Sc., Microbiology

1. Physical and chemical methods in control of microbial growth is included in Unit- IV, fundamentals of microbiology and classification (19MBP101).
2. Double beam spectroscopy, column chromatography, MS-MS are included in Unit- I and Unit- III respectively in Bio instrumentation (19MBP104).
3. Marine micro and macroorganisms and their significance, seaweeds, agriculture, cosmetics and saline tolerant microbes -probiotics are included. Unit –III and Unit-V completely reframed in Marine microbiology (19MBP105A).
4. Biofungicides and bionematicides, and its application are included; bioremediation of air pollutants was shifted from Unit-III to Unit-II. Microbes in agriculture were included in Unit-III. Topics like plant growth promoting microorganisms- Mycorrhizae, Rhizobia, Azospirillum, Azotobacter, Azolla, Frankia, Blue green algae, Phosphate solubilizers fluorescent *Pseudomonas* were included in Unit-V, Environmental and agricultural microbiology (19MBP204)
5. FCO, CIB are included in unit V. Antibiotics and antimicrobial drug resistance, search for new antimicrobial agents are shifted from Unit IV to Unit II. International disinfectant testing protocol is shifted from Unit-V to Unit-IV. Quality parameters to assess natural products, nutraceutical product, and pharmaceutical products are shifted from Unit-III to Unit-V in quality assurance and quality control (19MBP205B).

6. Topics like Enzymes- Introduction, Enzyme Kinetics, Immobilized Enzyme system, large scale production, medical and industrial utilization, crystallization centrifugation, filtration, freeze-drying and spray drying are included in unit-IV Bioprocess engineering (19MBP205C).
7. Experiment on estimation of protein by Lowry's Method is included in Advanced Practical –III (19MBP211).
8. Immunoelectrophoresis is included in advanced immunology (19MBP301) unit-V.
9. In Food and industrial microbiology (19MBP302) Unit 4 and unit 5 have the same syllabus as of bioprocess engineering. These two units were replaced with food microbiology syllabus and the paper was renamed as food microbiology (19MBP302).
10. Concepts on writing a patent a document is included in microbial technology and intellectual property rights (19MBP304).
11. Nitrogen fixers, Phosphate solubilizers and Potassium solubilizers are added in Unit II. Ecto and Endo mycorrhizae added in Unit III. Quality control parameters, ISI-FCO norms are added in Unit V.
12. Ethical guideline for use of animals in research is added in Unit I. Subtopics are included in all units in laboratory animal care (19MBP305B).

M.Sc., Microbiology programme consist of 27 courses. There is a syllabus changes in 12 courses. The percentage of changes in the syllabus is 44.44 % for PG programme from the academic year 2019 – 2020.

M.Phil/Ph.D., Microbiology

Continuous, batch, fed batch, aeration agitation and pH are included in unit II and ultra and micro filtration are included in unit III in industrial and pharmaceutical microbiology (19RMB301).

M.Phil/Ph.D., Microbiology programme consist of 6 courses. There is a syllabus change in 1 course. The percentage of changes in the syllabus is 17 % for M.Phil/Ph.D programme from the academic year 2019 – 2020.

The Board passes the syllabus for B.Sc Microbiology, M.Sc Microbiology, M.Phil&Ph.D Microbiology.

The Curriculum and credits were approved as such for the academic year 2019- 2020.

The meeting came to an end with a vote of thanks by the Chair.

Chair person



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