



GOVERNMENT COLLEGE FOR WOMEN (A) SRIKAKULAM

Accredited with NAAC 'A' GRADE

DEPARTMENT OF MICROBIOLOGY

The Board of Studies meeting is held on 27.09.2023 Time: 11 Am in the Department of Microbiology at Government College for Women (Autonomous), Srikakulam for 2023-24 admitted students with reference to the following :

- i) UGC Letter No.F22-1/2017 (AC) dated 28.11.2018 regarding autonomous status.
- ii) Dr.B.R.Ambekar University, Srikakulam letter, RC.No.BRAU/FJ : conforming Autonomous Status dated 15.03.2019.
- iii) Proceedings of Vice-chancellor , Dr.B.R.Ambekar University, Srikakulam vide R.C.No.BRAU BOS 2023 dated 23.09.2023 regarding allotment of University subject expert.

The following members attended and discussed the various academic matters of the Syllabus and its evaluation.

Minutes of Board of Studies – 2023-24

The Board of Studies of Department of Microbiology met on 27-09-2023 and resolved the following:

1. The board endorsed the revised Choice Based Credit System (CBCS) curriculum aligning with APSCHE syllabus. This curriculum has been further customized, with up to 40% modifications, in accordance with the National Education Policy – 2020.
2. Approval was granted for designed syllabus for semesters 2 to 5 in B.Sc. Microbiology (minor) for the 2023-24 admitted batch. The syllabus has been meticulously tailored to address the needs of the student, meet contemporary employability requirements, and foster proficiency in Microbiology.
3. The curriculum comprises 6 courses, each with 3 credits for theory and 1 credit for practical.
4. Upon completing semester-2, students will partake in a 4-week internship-1 involving a Community Service Project (CSP) and will receive 4 credits. In semester-4, students will embark on a more extensive internship-2 lasting 8 weeks, focusing on industry training, also yielding 4 credits. Beyond the fourth semester, students are required to undertake a short-term internship, which includes a 6-month On Job Training (OJT) in an industrial setting as part of the third internship.
5. Approval was granted for the syllabi and model question papers for the 2021-22 and 2022-23 intake. Notably, the skill enhancement courses for semester-5/6 have been

updated to include 6A-Industrial Microbiology, 7A-Food Microbiology, 6B-Microbial Quality Control and Techniques, and 7B-Drug Design, Discovery, and Intellectual Property Rights. Model papers will be set for 60 marks.

6. The Continuous Assessment System (CAS) was approved and ratified for all incoming batches. This includes a) the 60-40 pattern for the 2022-23 and 2023-24 admissions (Blueprint) and b) the 75-25 pattern for the 2021-22 and 2020-21 admissions (Blueprint).
7. Internal assessments will encompass a spectrum of cognitive levels, ranging from the foundational Lower Order Thinking Skills (LOTS) to the more advanced Higher Order Thinking Skills (HOTS) encompassing Remembering, Understanding, Creating, Applying, Evaluating, and Analysing.
8. A range of academic activities, including seminars, workshops, symposia, field visits, quiz programs, and exhibitions, will be organized to instill a creative mindset among students and keep them informed about the latest developments in the applied fields.
9. Students will be encouraged to undertake independent research projects at the undergraduate level, supported with the necessary infrastructure and guidance.
10. Remedial coaching will be provided to support students who may need extra assistance.
11. The adoption of an innovative teaching approach using audiovisual lessons based on ICT was endorsed.
12. It was resolved to introduce a value-added course titled "Food, Nutrition, and Health Education" within the department.
13. Guidelines set forth by the academic council will be implemented as part of the department's initiatives.

MODIFICATIONS IMPLEMENTED IN THE BOS

Course -1 Introduction to Microbiology

In unit-1, we have introduced History of microbiology by including Theory of Spontaneous generation , contributions of Chares Chamberland discovery of fermentation and pasteurization. These have replaced the ancient themes.

In unit-2, the curriculum now explicitly highlights the applications of microbiology in various fields, including medicine, environment, food, agriculture and industry.

In unit-3 we have added a section that clearly outlines the general characteristics of Archaea, focusing on their anaerobic environment, halophilic and thermophilic nature.

In unit-5 Growing microbes in Lab: Five I's – originally allocated for just five hours, we have distributed equal weightage to all units. Topics such as pure culture isolation techniques, role of incubator and staining methods have been incorporated to provide sufficient inputs regarding inoculations techniques.

Additionally in the practical segment of course-1, we have introduced Simple staining and Lactophenol staining, emphasizing observations over hands-on experiments.

Course-2 Biomolecules and enzymes

In unit 4, the curriculum originally covered "Types of vitamins" To make it more manageable for students, we have divided this topic into "Fat-soluble vitamins" and "Water soluble vitamins" to simplify the questions for students.

Course-3 Molecular Biology and Microbial Genetics

To address similar issue with the original syllabus we have specified "Generalized Transduction" and "Specialized Transduction" in place of broad "Types of Transduction". types of transduction given in source syllabus.

Some of the practical topics related to DNA and RNA characteristics, Transcription and Translation , bacterial transformation, plasmid DNA have been removed due to their complexity and the need for advanced equipment. Additionally, " Induction of mutations in bacteria" by UV light is replaced with " Inductions of mutations in fungi by UV light" because observing the change in growth of fungal mycelia provides clearer results than bacterial colonies.

Course-4 Microbial physiology & metabolism

In unit-1, we have further described " Nutritional requirement of microorganisms" by categorizing them into "Major elements, minor elements and growth factors" to facilitate short type questions. The curriculum now explicitly mentions "Nutritional groups of microorganisms" including Photo autotrophs, Photoheterotrophs, chemoautotrophs, chemoheterotrophs, mixotrophs and auxotrophs.

Course-6 Applied Microbiology

In this course, we have made significant changes to unit-1,4 and 5 to ensure they contain enough content.

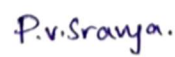
In unit-1 only one topic was originally provided, we have shifted it . We have also added "Microbiology of water" to emphasize the role of microorganisms in sewage treatment and removal of pathogens from drinking water.

In unit-4 now includes "Fermented Foods and Milk Microbiology", focusing on the preparation of fermented foods and milk analysis to provide practical and job oriented skills

to students.

In unit -5 we have merged content from Unit-1 and introduced additional topics like the preparation of DPR and IPR to generate the sufficient number of questions for assessments. In practical-6 , we have included “Determination of MPN” and “Determination of MBRT”(milk-borne pathogen testing) which enhance student’s capabilities in examining water and milk.

APPROVAL OF THE BOS COMMITTEE MEMBERS:

MEMBER	NAME & DESIGNATION	SIGNATURE
Head of the Department (Chairman)	Dr.Ch.Lalitha HOD, Dept. of Microbiology Govt. Degree College for Women(A), Srikakulam	
Subject Expert (University Nominee)	Dr.K.Swapna Vahini Dept. of Biotechnology Dr.B.R.Ambedkar University Srikakulam	
Subject Experts (from outside the parent university)	Dr.Ch.Shanthi Devi Lecturer in Microbiology Dr.V.S.Krishna Govt. College (A) Visakhapatnam	
	D.Jayashree, Lecturer in Microbiology, ASD Govt. Degree College for women (A), Kakinada	
Member from Industry	Dr Geetha Srikanth Yarlagadda Managing Director LB Agro products	
Member from Alumni	P.Venkata Sravya MSc Microbiology Andhra University	
Principal	Dr.K.Surya Chandra Rao Principal Govt. Degree College for Women(A), Srikakulam	

