Vivekanand Education Society's College of Arts, Science & Commerce (Autonomous)
Minutes of the 3rd Meeting of the Board of Studies (2025 -2028) in Microbiology

Date: 13th October 2026

Time: 11:00 AM - 1:15 PM

Mode: Online

Google Meeting Link and ID: meet.google.com/jwf-yeom-aqr

Agenda for the Meeting:

1. Welcome and Introduction of all the BOS members
2. Discussion and approval of the Semester 1 BSc (Microbiology) syllabus and scheme of course evaluation
3. Overview of the M.Sc (Microbiology) syllabus (Sem 1- Sem 4)
4. Discussion and approval of the Semester 1 M.Sc / 4th year BSc (Honours) syllabus and scheme of course evaluation
5. Modification of Course learning outcomes of UG papers as per Bloom's taxonomy
6. A.O.B.- Admitting BSc Biotech and Life Science students to MSc Microbiology course

Members Present

Faculty, Department of Microbiology, VESASC

- Dr. Dona Joseph – Chairperson & Head, Department of Microbiology
- Dr. Malay Shah – Member
- Dr. Shweta Patil – Member
- Mr. Suman Ganger – Member
- Dr. Mugdha Apte – Member
- Ms. Malavika Pillai – Member

External Members

- Dr. Anup Padmanabhan – External Subject Expert
- Dr. Deepti Gupta – External Subject Expert
- Mr. Kumaraswami Sivan – Industry Representative
- Dr. Subhojit Sen – PG Alumnus

Absent

- Prof. Dr. Maninder Kaur Dhaliwal – VC Nominee (on examination duty)

Agenda 1: Welcome and Introduction

Dr. Dona Joseph welcomed all members to the third meeting of the Board of Studies constituted by the Department of Microbiology, VESASC.

Agenda 2: Review of the Microbiology Major Syllabus (Semester I – FYBSc)

Mr. Suman Ganger presented an overview of the Semester I FYB.Sc. Microbiology syllabus. He informed the members that the syllabus has undergone continuous refinement over the past three years based on faculty feedback. Hence, it was proposed to retain the existing syllabus. He aslo informed that as per institutional policy, paper titles must remain unchanged for a minimum period of three years.

Key points discussed:

- Students are offered one Major paper along with Minor and other courses from the first year. The system of offering two Major papers has not been adopted by the college. Students opting for Microbiology complete their B.Sc. degree with Microbiology as the Major subject.
- Topics not accommodated in theory due to NEP constraints are covered under the VSC course.
- Out of the required 22 credits in the first year, 8 credits are from Microbiology.
- Feedback for the Open Elective course "Microbes and Food" was highly positive; therefore, no changes were proposed.

Resolution: The experts approved the syllabus without modification.

Agenda 3: Overview of the M.Sc (Microbiology) syllabus (Sem 1- Sem 4)

Ms. Malavika Pillai explained the credit distribution for Semesters VII and VIII.

- The first year of M.Sc may lead to:
    - B.Sc. (Honours)
    - PG Diploma
    - Continuation into M.Sc. degree
- Two exit options:
    - After one year (Honours/PG Diploma)
    - After two years (M.Sc.)
- Students who opt for the B.Sc (Honours) program and have a CGPA ≥ 7.5 in all the semesters from I to VIII can directly apply for a Ph.D
- The intake capacity at the Semester I M.Sc. / Fourth Year B.Sc. (Honours) program would be 24 students, which is the same as the current intake capacity of the M.Sc (Microbiology) course.
- Dr. Subhojit enquired about credit parity between the 3 different types of courses. Mr. Suman clarified that presently 22 credits are proposed, subject to university guidelines.

Ms. Malavika Pillai further explained the Semester Structure of the PG Programme

Each semester includes:

- Two Major Mandatory papers (4 credits each)
- One Elective paper (4 credits)
- Research Methodology & Biostatistics (Semester I only – 4 credits)
- Practical course based on mandatory papers (4 credits)
- Independent practical course (2 credits)

Semester II additionally includes:

- On-the-Job Training (4 credits; 120 hours)

Total credits per semester: 22 credits

Four electives will be offered annually; students will select two based on majority preference collected through a Google Form.

Dr. Deepti asked if there was a separate syllabus for M.Sc. by research. Dr. Dona informed the experts that this was not discussed in the college yet. She further asked if the department was offering 3 + 2 credits in UG to which Mr. Suman responded by informing that in UG there were 2 credit courses at the UG level and 4 credit courses at the PG level offered in the college.

Suggestions by Experts

- Introduction of prerequisites/entrance criteria for admission (Dr. Subhojit).
- Possibility of online courses (up to 40%) approved by the Academic Council.
- Need for student counselling in online course selection.
- Online courses may require approval from subject teachers.

Agenda 4: Discussion and Approval of Semester I M.Sc. / Fourth Year B.Sc. (Honours) Syllabus and Scheme of Evaluation

<u>Major Mandatory Course I: Molecular Genetics</u>

Ms. Malavika presented the syllabus.

Key discussion points:

- Some topics from UG have been included to compensate for NEP limitations at UG level.
- Detailed operon systems added beyond lac operon basics.
- Conjugation and gene transfer problems assigned as self-study.

Suggestion:

- Include cancers caused by viruses and bacteria (Dr. Subhojit).

Action:
DNA virus-associated cancers and bacterial examples (e.g., *Helicobacter*) to be incorporated.

Major Mandatory Course II: Biochemistry

The syllabus contents were presented and discussed.

Suggestions:

- Include signalling pathways, quorum sensing, cilia/flagella regulation, and ciliopathies.
- Remove basic topics that are covered in UG
- Define prerequisites due to varying student backgrounds.
- Self-study of topics such as protein sequencing methods and enzyme kinetics applications to be reconsidered.
- Sequencing topics to be aligned with instrumentation/bioinformatics modules.

Practicals Based on Mandatory Courses (4 Credits)

The practical syllabus was approved.

Suggestions:

- Although classical, the Ames test remains pedagogically valuable.
- Conduct alumni surveys to identify currently relevant laboratory techniques.

Practical Course: Bioinformatics (2 Credits)

Approved with the following modifications:

- AlphaFold protein prediction and limitations included.
- Structural comparison of wild and mutant proteins using PDB tools.
- Inclusion of visualization software: PyMOL and Chimera.
- Phylogenetic analysis using MEGA software.
- Reduction of theory to encourage exploratory learning.

Major Electives

1. Elective I: Prokaryotic Taxonomy and Diversity

Approved without changes.

2. Elective II: Advanced Virology

Suggestion to include immune responses, clinical trials, and challenges.
It was clarified that immune responses are covered in Applied Immunology (M.Sc. Part II).

3. Elective III: IPR, Bioethics and Bioentrepreneurship

Suggestions included:

- Recommend online courses on Bioethics conducted by NIH/ICMR/DBT
- Inclusion of GMO and clinical trial guidelines.
- Idea pitching and participation in innovation platforms (e.g., Avishkar, IIT Mumbai).
- Inclusion of regulatory frameworks (DBT, FSSAI, FDA, ICMR, AYUSH).

4. Elective IV: Omics Studies

Further consultation between Mr. Suman and external experts to finalize modules.

Agenda 5: Modification of UG Course Learning Outcomes

Dr. Dona informed members that Course Outcomes (COs) and Programme Outcomes (POs) of all the UG syllabi must be revised for Bloom's Taxonomy mapping. She suggested that rather than discussing all the courses in the meeting, the updated syllabi could be mailed to all the members.

Resolution: Experts agreed to the suggestion.

Agenda 6: Any Other Business (A.O.B.)

Admission of B.Sc. graduates from Life Science disciplines other than Microbiology into the M.Sc. The Microbiology programme was proposed by Dr. Dona. Dr. Deepti and Dr. Subhojit Sen supported the suggestion, noting that most universities permit cross-disciplinary admission to postgraduate programmes. Dr. Deepti further recommended introducing a bridge course for students from non-Microbiology backgrounds, if necessary, to ensure academic preparedness.

Conclusion

Dr. Dona Joseph thanked Dr. Subhojit Sen and Dr. Deepti Gupta for their valuable insights and all members for their active participation. Special appreciation was extended to Ms. Malavika Pillai for her extensive efforts in designing the syllabus. The meeting concluded with acknowledgement that the session was highly productive, marked by constructive discussion and valuable recommendations.

Dr. Dona Joseph
Chairperson & HOD
BOS (Microbiology)

A few snapshots of the meeting: