

Vivekanand Education Society's College of Arts, Science & Commerce (Autonomous)

Minutes of the Fourth BOS meeting (Online) in the subject of Microbiology

Date : 29th June 2023

Time : 11.30 a.m to 2.00 p.m

Mode: Online

Google Meeting Link and ID: meet.google.com/mzg-aqpg-yuo

Agenda for the Meeting:

- 1. Overview of NEP 2020 guidelines issued by the Government of Maharashtra(20th April 2023 circular).**
- 2. Finalize the course syllabi for Semesters 1 and 2 of the UG (FYUP) in Microbiology as per NEP2020.**
- 3. Finalize the course syllabi for Semesters 1 and 2 of the PG course in Microbiology as per NEP2020.**

Following members of the BOS attended the **Any other matter with the permission of the chair.**

meeting

- 1. Dr. (Mrs.) Santhini S. Nair (Chairperson & HOD)**
- 2. Dr. Dona J. Joseph, Dr. Malay Shah, Dr. (Mrs.) Shweta A. Patil, Mr. Suman P. Ganger, Dr. Mugdha Apte, Dr. Pradnya Gogte (Members, Faculty at the Department of Microbiology, VESASC)**
- 3. Dr. Debjani Dasgupta (External Subject Expert Member)**
- 4. Dr. Purvi Bhatt (External Subject Expert Member)**
- 5. Dr. Subhojit Sen (PG Alumnus)**

Leave of absence was granted to the following members:

- 1. Dr. Lolly Jain (University Nominee) who had agreed to attend by prior mail confirmation but had last minute personal emergency.**
- 2. Dr. Girish Mahajan (External Subject Expert Member- Industry Representative)-due to other official commitments and had intimated previously.**

Agenda 1: Overview of NEP 2020 guidelines issued by the Government of Maharashtra(20th April 2023 circular).

Dr. (Mrs.) Santhini S. Nair welcomed all the members to the **fourth BOS** meeting in Microbiology. She briefed the external members about the NEP 2020 structure (as per 20th April 2023 circular) for the First Year Undergraduate Program (FYUP) shared by the Government and the structure framed by the college

in accordance with the same. She also mentioned that this has been arrived at after attending several meetings conducted at the university level with Government officials and also several brainstorming sessions held in the college with the HODs, Staff members including the Academic coordinators. She gave an overview of the Academic Bank of Credits(ABC) and newly introduced courses like Open Electives (OE), Vocational Skill course(VSC), Skill Enhancement course (SEC) and Indian Knowledge System (IKS) courses which are the components of the NEP structure. She then introduced the department structure for NEP for both SEM 1 and 2 of the undergraduate course designed for FYBSc Science program explaining that students would be selecting **Microbiology as the Major subject** during the first year admission process, this being a new requirement as per NEP structure.

Agenda 2: Finalize the course syllabi for Semesters 1 and 2 of the UG (FYUP) in Microbiology as per NEP 2020.

Semester 1:

Microbiology Major papers (Theory and Practicals)

Draft syllabus for **Microbiology Major Paper 1(Fundamentals of Microbiology) and Paper 2 (Cell Structure and Biomolecules)** for Semester 1 was explained by Dr. Shweta Patil. She emphasized that the majority of the contents like significance of microbes, journey of microbiology is retained from the earlier autonomous syllabus approved by the BOS with some rearrangements in the content to suit NEP structure. Dr. Sen suggested inclusion of some concepts of evolution in the syllabus to give the students a glimpse into the subject but at the same time to keep the topic light as students are unable to appreciate the concepts at FY level. Mr. Suman Ganger discussed the practicals based on the major papers and explained the rearrangements done for the NEP structure.

Vocational Skill Course (VSC)

VSC was discussed by Dr. Dona Joseph. According to the guidelines the VSC course should include Hands on Training corresponding to the Major and/or Minor Subject. She explained that the department has framed the syllabus for **Basic Techniques in Microbiology** with the intention of making the students aware of the basic techniques like aseptic transfers and isolation keeping in mind the exit option that the students have in NEP after the Semester 2 with the Certificate course. The experiments that cannot be performed in the lab will be explained using videos and virtual labs. A new practical component for preparation of permanent slides is incorporated in the syllabus which originally was not a part of the current autonomy syllabus.

Skill Enhancement Course(SEC)

The NEP guidelines state that SEC will be a basket offered along with the Science departments - Microbiology, Chemistry, Physics and Mathematics. Dr. Malay Shah introduced the syllabus for the course titled as **Sterilisation and Disinfection practices**, which was framed as per the SEC guidelines. This will enable students to think independently and they will be able to perform/carry out the required sterilization techniques. Again the selection of SEC was based on the fact that the students have an option to exit at the semester 2 end. Dr. Sen suggested the omission of the topic on use of nanoparticles from the syllabus as it would be too advanced at this stage. The suggestion was accepted by the panel.

Indian Knowledge System(IKS)

Dr. Mugdha Apte discussed IKS and the framing of the syllabus for **Ayurveda and Lifestyle**. She discussed the units covered as a part of the paper- Ayurveda and food, Vedas and ancient Microbiology. The books for this course have been prescribed by the Government. Dr. Santhini Nair explained that this a completely new area to be covered as part of curriculum. Dr. Sen felt the course content should be based on established facts and documented evidence published in the literature. It should not be very recently published research papers. He also suggested that the course could be framed in such a manner that it can be conducted by multiple departments, each department covering ancient Indian Knowledge in respective fields (Microbiology, Physics and Chemistry). Dr. Santhini Nair then explained that this decision of having subject specific IKS is made at the college level.

Semester 2:

Microbiology Major papers (Theory and Practicals)

Draft syllabus for **Microbiology Major Paper 1 (Microbial Growth and Interactions) and Paper 2 (Microbial Diversity)** for Semester 2 was read by Dr. Shweta Patil. She emphasized that the majority of the contents like interactions, growth and diversity were retained for earlier autonomous syllabus approved by the BOS with some rearrangements in the content to suit NEP structure. Mr. Suman Ganger discussed the practicals based on the major papers and explained the rearrangements done for the NEP structure.

Vocational Skill Course(VSC)

VSC was discussed by Dr. Dona Joseph. According to the guidelines the VSC course should include Hands on Training corresponding to the Major and/or Minor Subject. She explained that the department has framed the syllabus for **Microbiological Analysis of Air and Water** with the intention of making the students aware of the techniques of air and water analysis keeping in mind the exit option that the students have in NEP after the Semester 2.

Skill Enhancement Course(SEC)

Dr. Santhini Nair discussed SEC. The guidelines state that SEC will be a basket offered with the other Science departments. Dr. Nair discussed the syllabus which was framed for **Applied Microbiology**. The syllabus was framed with respect to giving a flavor of the different applied fields like Medical, Food and Industrial Microbiology. However Dr. Sen commented that the students would face problems in imbibing difficult techniques of Medical microbiology at the Sem 2. Instead he gave suggestions to include Food and Industrial Microbiology as applied fields. Other applied fields can follow in the further semesters. This suggestion was accepted.

Courses offered by the department for other courses

Minor Paper (For other Science students)

Dr. Malay Shah read the minor paper in microbiology which will be offered as a basket to Math, Physics and Chemistry students. He discussed the theory and practicals. The department will be offering **Introduction to Microbiology** in this Minor paper. This paper is designed keeping in mind the importance of Microbiology to Chemistry and Physics students. The syllabus for this paper was unanimously approved by the BOS without any changes.

OE (Open Elective) (For Arts/ Science students)

Mr. Suman Ganger explained that OE will be offered as two baskets by the Arts and Science departments. **This course will be offered in Semesters 1 and 2.** The Microbiology department will be offering **Microbes and Food** as the elective course. The syllabus has been framed keeping in mind that the department students too may opt for this elective paper. The paper will cover microbiological aspects of day to day life covering topics like food fermentation, pre and probiotics, food spoilage and food borne diseases as well as food preservation techniques used at home. Dr. Dona Joseph explained that the target audience for this paper is Arts students and Science students from other subjects so the department students will be encouraged to take up elective papers offered by other departments.

Agenda 3: Finalize the course syllabi for Semesters 1 and 2 of the PG course in Microbiology as per NEP 2020.

Dr. (Mrs.) Santhini S. Nair briefed the external members about the NEP 2020 structure (as per PG circular Dated 16th May 2023) shared by the Government and the structure framed by the college.

Semester 1

MAJOR MANDATORY (Paper 1 and 2, practicals)

Dr. Pradnya Gogte read the Theory and practicals for the Major Mandatory papers that the department plans to offer. She explained that the majority of the papers have been restructured using the current approved autonomy syllabus. The department will be offering **Genetics of Prokaryotes and Virology, Fungal & Algal biotechnology** as the major mandatory papers and practicals based on the same. There will be a separate 2 credit major mandatory **Bioinformatics practical**.

Dr. Sen suggested that NEP also states 40% of online courses can be included for a few students. Dr. Santhini Nair informed that these courses can be only from Swayam, Mahaswayam portals and must be evaluated.

Electives

Dr. Mugdha Apte discussed the elective options that the department plans to offer. **Advanced Bioprocess Technology/Nanobiotechnology** syllabus is framed for this semester. The advanced bioprocess technology is an extension of topics after the Third year. Dr Sen suggested that in the upcoming semesters Radio Microbiology, Microbial leaching technology can be introduced to the studies keeping in mind the applications.

Research Methodology

Dr. Mugdha Apte discussed the compulsory **Research Methodology and Biostatistics** paper that will be offered in this semester. Dr. Sen suggested inclusion of use of AI in creating research presentations as a part of the syllabus.

Semester 2

MAJOR MANDATORY (Paper 1 and 2, practicals)

Dr. Pradnya Gogte read the Theory and practicals for the Major Mandatory papers that the department plans to offer. She explained that the majority of the papers have been restructured using the current approved autonomy syllabus. The department will be offering **Biochemistry and Food, Pharma and Cosmetic Microbiology** as the major mandatory papers and practicals based on the same. There will be a separate 2 credit major mandatory **Introduction to Animal and Plant Tissue Culture**. Dr. Sen suggested that Animal cell culture and Plant tissue culture can be conducted by collaborating with relevant institutes so that the students get ample hands-on experience.

Electives

Dr. Mugdha Apte discussed the elective options that the department plans to offer in semester 2. **Advances in Biotechnology/Intellectual property rights and Bioentrepreneurship** syllabus is framed for this semester. Microbial biotechnology topic was newly added to the Advances in biotechnology paper keeping in mind that the degree is MSc Microbiology.

OJT (On Job Training)

Dr. Mugdha Apte discussed the 4 credits **on job training** components that need to be completed during the **break between Semester 2 and 3**. Dr. Sen suggested a few teaching institutes as well as labs where students could complete this training.

Agenda 4 :Any other matter with the permission of the chair.

There was discussion regarding conduct of research projects at other institutes. This will give students good research exposure. Mr. Suman Ganger suggested that the papers prescribed for Semester 4 can be covered in **online mode** as the students will be doing their project work at other institutes. The different working possibilities of how external projects can be facilitated will be worked out and will be discussed during the next BOS meeting.

Dr. Mugdha Apte mentioned that in the future NEP MSc syllabus will need modification based on the NEP syllabus framework for undergraduate programme as this will also be the syllabus for **4th year Undergraduate programme (BSc Honors)**.

No other major queries were raised and the syllabus was approved by all the members.

The meeting ended on a positive note with the chairperson thanking all the members for their valuable inputs and suggestions.



Dr. (Mrs.) Santhini S. Nair
Chairperson & HOD



