

SOPHIA COLLEGE (AUTONOMOUS)

MINUTES OF THE BOARD OF STUDIES (MICROBIOLOGY) MEETING HELD ON

10th AUGUST 2019

Place: Sophia College, Computer Laboratory 2

Time: 11.00 a.m. onwards.

Board of Studies (composition):

Sr. no.	Name	Designation
1.	Ms. Miriam Stewart	Vice Chancellor's nominee
2.	Dr. (Ms.) Jyoti Kode	Expert from non-parent University (ACTREC)
3.	Dr. (Ms.) Annamma Odaneth	Expert from non-parent University (ICT Matunga)
4.	Mr. Sivan K	Industry expert
5.	Ms. Nidhi Tomar	Meritorious alumna (Granted leave of absence)

Staff Members -

Sr. no.	Name	Designation
1.	Dr. (Ms.) Arjumanara Surti	Head, Department of Microbiology Associate Professor, Chairperson
2.	Dr. (Ms.) Gianni E. Mapara	Associate Professor
3.	Ms. Suparna Dugal	Associate Professor (on Medical Leave)
4.	Dr. (Ms.) Rajbinder Kaur Dehiya	Associate Professor
5.	Ms. Shraddha Prabhu	Assistant Professor
6.	Ms. Jyoti Mantri	Associate Professor
7.	Mr. Vijay Vig	Assistant Professor
8.	Ms. Ruqsana Khan	Assistant lecturer (leave vacancy)

Agenda No. 1

Introduction of members of BOS, Microbiology

Dr. (Ms.) Arjumanara Surti, Head of the Department of Microbiology, welcomed all the respected members of the BOS.

Agenda No. 2

Opening remarks by the Head of the Department included-

- Minutes of last BOS meeting were read out.

Agenda No. 3

Presentation of TY syllabus

- The changes in TYBSc syllabus suggested by the BOS members were incorporated and highlighted for the benefits of the BOS members.
- Dr. Surti said that the titles of the units were shortened.
- Ms. Miriam Stewart pointed out that the collective objectives should be split up paper wise.

Dr. Surti said she will do that.

- As recommended by the BOS members in the previous meeting, some topics from T.Y.B.Sc. Paper III were removed.
- Dr. Odaneth suggested that metabolite analysis using various techniques such as LCMS, HPLC and use of radioactive labels to study the fate of metabolites should be introduced. Books such as "Analytical Biochemistry" by Harper and "Outlines of Biochemistry" by Conn and Stumpf should be used for teaching biochemical pathway networks.
- Dr. Jyoti Kode suggested students could present papers during practical examinations. Dr. Surti informed that students present papers during their regular

lectures and young staff is also involved in e-learning. It will also not be possible for 35 students to present papers during the exams.

Resolution

- **The TYBSc syllabus was passed by the BOS members**

Agenda No.4

Discussion on Proposed MSc part I syllabus

- Dr. Surti read out the MSc part I syllabus and invited comments from the BOS members

Paper I

- Dr. Odaneth inquired whether the applications of the basic virology have been included. Dr. Surti informed that it has been included.
- Dr. Odaneth suggested that more microbial cell biology should be included.
- Dr. Kode suggested that the emerging viral diseases be included. Dr. Surti informed that the same has been included (in paper IV)

Paper II

- Dr. Surti read out the units and sub topics.
- Since the paper included the topic on Bioinformatics, Dr. Kode offered to help arrange a workshop at ACTREC for the students.
- She also pointed out that the 11 lectures assigned to the topic of gene expression are not needed and can be reduced. Mr. Vig said that the same topic is done at a very basic level in S.Y.B.Sc and will be covered in detail in M.Sc. from a reference book of a high level of difficulty.

- Dr. Kode said that the topic CRISPR CAS should be kept as a basic concept rather than applications.
- Dr. Odaneth felt that the syllabus so far looked like that of the subject of Life Sciences and needs modification with respect to Microbiology.
- She suggested that a comparative account of the gene expression in various microbial systems (bacteria, algae and fungi) could be included. This could be further extended to how these differences allow adaptation to the diverse environmental conditions of growth, specifically with respect to application of these organisms in industry and as bioremediation systems.
- Mr.Sivan agreed to this. He said that genetics of prokaryotes should be emphasized more than that of eukaryotes. He also said that they focus a lot on bacteria till T.Y.B.Sc. and sudden shift to eukaryotes would be difficult for them. Dr. Surti said that the staff wanted to prepare students for NET and SET examinations but she had argued that that is not our focus.
- Dr. Dehiya and Mr. Vig said that the topics might help the students in their further studies and research.
- Dr. Odaneth reiterated that the focus should still be more on microbiology and less on eukaryotes.
- Ms. Stewart said that there are eukaryotic microorganisms as well and hence some of the focus should be on eukaryotes.
- Dr. Kode suggested to include 75% prokaryotes and 25% eukaryotes.
- Dr. Odaneth suggested books such as the one authored by Lodish, could be referred to. She also indicated that the specific topics should be selected rather than keeping the paper open ended. Topics like codon optimization could be included.
- Ms. Miriam Stewart pointed out that the topic on mutation is a repetition of the T.Y.B.Sc. topic. Mr. Vijay Vig replied that the reference book that would be used for teaching this topic would be a one with more complex information. Ms. Stewart suggested to remove overlap and add a new topic rather than sticking to the same topic

on the enhanced level. Dr. Odaneth suggested that adaptive mutation in microorganisms and their importance in evolution and microbial population genetics be included.

- She also suggested that in functional genomics, genetic map of *C.elegans* can be included. Students can locate different genes and also find mutations in the genome.
- Dr. Odaneth inquired about the books used to teach recombination. Mr. Vig replied that Molecular Biology of the gene by Watson will be used.
- Mr. Vijay Vig noted that the course codes need to be corrected.
- Mr. Sivan suggested to use Skype for meetings.

Paper III

- Ms. Miriam Stewart said that the title of one of the units should be microbial degradation of aromatics or xenobiotics instead of microbial degradation.
- Dr. Odaneth gave suggestions pertaining to the topics in this paper as listed below -

Microbial analyte profiling using LCMS and KEGG

-Optimization of media composition based on C/N ratio calculation

-Following the fate of substrate molecules using radiolabeled nutrients such as ¹⁴C glucose

-Case studies documented in research papers could be used in case information is not available in text books

-Microbial degradation of various organic molecules (lignocellulose, xenobiotics, and plastics) along with the degradative pathways could be included as an entire unit.

-The microbial degradation could be linked to microbial population genetics as well as the genetics controlling the degradative pathways. The degradative pathways could focus on one application for e.g. Solid waste management

-mutations can be linked with biotransformation of PAHs.

- Ms. Stewart said that the above can be linked with environmental microbiology in MSc II.
- Ms. Shraddha Prabhu inquired about the books to be used for the topic of Instrumentation. Ms. Stewart said that research papers can be used for the same.

Paper IV

- Dr. Kode asked the difference between "Immune system and health" and "Clinical Immunology". Ms. Mantri said that manifestations will be included in clinical immunology.
- Dr. Kode suggested that the topic of cytokine could also include TH1, TH 2 and TH17.
- Topics such as cancer initiation, progression, Tumor and Tumor associated antigens could also be included in the topic 4.2.
- Dr. Kode pointed out that the title of tumor evasion should be immune evasion.
- Measles could be deleted and more topics on cancer vaccines could be included.
- Ms. Jyoti Mantri raised a query regarding the nature of practicals that could be included for Immunodeficiency diseases. Mr. Sivan suggested that inclusion of diagnostic kits in practicals could help solve the problem. He informed about a number of such kits for e.g. kits to diagnose autoimmune diseases, TORCH profiling, diagnosis of Toxoplasma. He also felt that interpreting "intermediates" is a challenge and students should be exposed as well as trained to deal with this aspect of testing.
- Ms. Mantri also raised a concern about a lack of technique around such kits. Mr. Sivan said that nonetheless these will help citing the example of ELISA.
- Dr. Odaneth suggested that Biostatistics could be included. She also felt that the topic on experimental vaccines and analytical preparation in vaccine development could be included.

- Mr. Sivan said that they should be doing some statistics in Epidemiology. Ms. Mantri said they are doing that. Mr.Sivan said that students could be exposed to automated methods for microbial identification and antibiotic testing by visiting microbiological laboratories in hospitals. Topics such as transplantation Immunology and the gut microbiome could also be included.
- Mr. Sivan suggested asking former MSc students for views regarding the syllabus.

Resolution

- **It was decided that alterations would be made as per the suggestions given and the syllabus would be presented again in the next BOS meeting.**

Meeting ended with a vote of thanks by Dr. Surti to all the BOS members and lunch was served.

Minutes prepared by: Dr. Rajbinder Kaur Dehiya and Mr. Vijay Vig

Edited and Approved by: Dr. (Ms.) Arjumanara M Surti