

**Ramnarain Ruia Autonomous College**  
**Department of Microbiology**  
**Board Members for Subject Board Meeting**  
**July 2017**

Sr. No.	Board Designation	Name of the Board Member	signature
1	Head of the Department	Dr. R.P Phadke	R.P.L. Phadke
2	Head of the University Department	Dr. Padma Deshmukh	Padma Deshmukh
3	Senior Teacher	Ms. Urmi Palan	U.Palan
4	Senior Teacher	Ms. Anushree Lokur	
5	Subject Expert	Dr. Nagesh Malik	N.Malik
6	Subject Expert	Prof. Durga Pawar	D.Pawar
7	Subject Expert	Dr. Nishigandha Naik	
8	Professional Expert	Dr. Annamma Anil	Annamma Anil
9	Professional Expert	Dr. Archana Krishnan	Archana Krishnan
10	MSc Part II Student	Mr. Shubham Katke	
11	TYBSc Student	Mr. Isha Desai	



# **Agenda for Subject board meeting**

**28<sup>th</sup> July 2017**

**Department of Microbiology**

**Ramnarain Ruia Autonomous College**

1. To Prepare & approve syllabi for FYBSc, SYBSc, TYBSc, MSc Part I & II in the subject of Microbiology for the academic year 2017-18
2. To decide methodology for innovative teaching and evaluation techniques
3. To prepare panel of Examiners for conducting TYBSc, MSc Part I & II Theory & Practical examination & suggest the same to the examination Committee
4. To deliberate and give suggestions for research & extension activities to be conducted in the department for the academic year 2017-18
5. Any other matter with the permission of the chair

## Minutes of the Subject Board Meeting for Microbiology

28<sup>th</sup> July, 2017

The first subject board meeting for Microbiology under autonomy was conducted in the department of Microbiology, Ramnarain Ruia Autonomous College on **Friday, 28th July 2017 at 2.00 pm.**

The meeting was attended by:

Sr. No.	Board Designation	Name of the Board Member
1	Head of the Department	Dr. R.P Phadke
2	Head of the University Department	Dr. Padma Deshmukh
3	Senior Teacher	Ms. Urmi Palan
4	Senior Teacher	Ms. Anushree Lokur
5	Subject Expert	Dr. Nagesh Malik
6	Subject Expert	Prof. Durga Pawar
7	Professional Expert	Dr. Annamma Anil
8	Professional Expert	Dr. Archana Krishnan
9	MSc Part II Student	Mr. Shubham Katke
10	TYBSc Student	Mr. Isha Desai

Dr. Nishigandha Naik was unable to attend the meeting and was granted leave of absence.

The meeting began with the members of the board introducing themselves.

Dr. R.P. Phadke briefed about the agenda of the meet. He also briefed the attendees about the objectives of the syllabi, and the desired outcomes.

Following are the minutes of the meeting and resolutions passed therein as per the agenda of the meeting:

**6. To Prepare & approve syllabi for FYBSc, SYBSc, TYBSc, TYBSc (Applied Component) and MSc Part I & II in the subject of Microbiology for the academic year 2017-18**

All the members were given a hard copy of the draft of the syllabi for FY, SY and TYBSc with suggested changes/ modifications that was prepared by the department members and was also mailed to all the members prior to the meeting. The discussion began with reviewing the **FYBSc Syllabus**. Prof. Durga Pawar appreciated the flow maintained in the curriculum and the contents introduced at FYBSc level. In paper 101 Dr. Annamma Anil suggested that the topic on 'Biobased economies' should be introduced as it will give the students a broad idea about the scope of the subject. She further suggested that concept of 'Microbial biocompartments' should be included in the curriculum under the topic on prokaryotic cell structure. Prof. Durga Pawar suggested inclusion of 'mitosis and meiosis' in this paper under the Unit on Eukaryotic Cell Structure.

In paper 102 Dr. Annamma suggested addition of 'Oligotrophs' in Unit I along with the study of VBNC, while Prof Durga suggested inclusion of 'Anaerobic cultivation' under the title of Cultivation of microorganisms. They also suggested inclusion of transport media in FYBSc curriculum. However Ms. Urmi Palan expressed her concern about its addition and the quorum agreed. The quorum however agreed to add 'Use of Enriched & enrichment Media' in the practical syllabus, as suggested by Dr. Padma Deshmukh. She suggested that lyophilization should be demonstrated to the students. Dr. Nagesh Malik suggested that all microbial interactions should be taught with suitable examples but this can be too elaborate so the number of lectures should be taken into consideration first.

In Paper 201, Prof Durga Pawar suggested that Cyanobacteria should be taught in detail so that studying metabolism of the same becomes easy in higher classes instead of emphasizing on Mycoplasma, Coxiella and Rickettsia. Dr. Annamma suggested inclusion of the commercial, medical & ecological significance of all the different microorganisms under this paper.

It was suggested by Dr. Anamma that in paper 202 more of mathematical expressions should be taught with reference to growth of microorganisms instead of topics on 'Synchronous growth and chemostat turbidostat'. The quorum unanimously agreed on deleting this topic in the unit. Dr. Archana Krishnan suggested that in paper 202 'Biosafety concepts' should be dealt with in details as it matters a lot industrially & even in research.

In the Practicals section of Sem I, Dr. Archana suggested about including cultivation of *Halobacterium*, while Dr. Annamma suggested about including Biogas production as a demo experiment as it makes learning process more effective. Both of them agreed to provide respective cultures for the experiments. Prof. Durga & Urmi Palan suggested inclusion of 'Detecting Normal flora from Throat swab and tooth tartar' as other optional samples for 'Study of normal flora' in practicals. After some deliberation, practical on 'Breed's Count' retained in the curriculum as it is still used industrially for rough approximation of cell number.

After this **SYBSc Syllabus** was reviewed by the committee. Dr. R.P.Phadke briefed the board members about the changes made in the syllabi. Prof Durga Pawar suggested that in paper 301, 'Standards for determining water quality' should be including in the curriculum. Dr. Annamma Anil suggested that 'Marine water microorganisms' should be dealt with in detail, considering the expanse of diversity and their significance. Prof Durga suggested that its essential to spell out 'Activated sludge, oxidation ponds, tricking filters and anaerobic digestion' under the topic on Secondary treatment of sewage, in UnitII.

Dr. Durga brought it to the notice of the members that the title of Paper 302 viz 'Analysis of Microbial Macromolecules' did not match with the contents of the paper. The members discussed various titles and agreed on changing it to, 'Introduction to Experimental Microbial Biochemistry'. In paper 302 Dr. Archana Krishnan suggested inclusion of 'Concept of DOE, Quality by design & Plackett Burman charts' in Unit I. She also demonstrated its use. However, Dr. Phadke explained their inability to fit it in the lecture load for that unit. Hence this suggestion was not approved. Prof. Durga suggested inclusion of 'Density gradient and isopycnic centrifugation' in Unit II, instead of elaboration on different types of centrifuges. All the members of the Board agreed to this suggestion. Dr Annamma & Prof Durga suggested addition of 'HPLC, GC & Reverse phase' in the topic on Chromatographic techniques as modes of chromatography.

All the members agreed unanimously on inclusion of Mendelian Genetics and Neomendelian Genetics in the curriculum under the SYBSc syllabus. Dr Padma Deshmukh suggested addition of ‘Comparison of Eukaryotic Transcription & Translation’ with that of prokaryotes in paper 303. The members also agreed on adding ‘Introduction to Genomics and Proteomics’ in this section.

Under practicals for this paper, Dr. Archana suggested the addition of ‘Bradford’s method for protein estimation’

In paper 401 Dr. Padma Deshmukh suggested inclusion of concepts of lethal dose & infectious dose. Dr. Durga suggested restructuring of the topics in the Unit II, ‘Microbial invasion in Human hosts’ of this paper to bring in better flow.

In paper 402 Prof Durga suggested inclusion of Cofactors and multi-enzyme complexes under enzymology, while Dr. malik suggested to specify that the topic on ‘Introduction to omics’ will now include, ‘Metabolome and metabolomics’.

Dr. R.P Phadke explained to the members that the **TYBSc Syllabus** under the autonomous status was not changed much as the students had gone through the University curriculum for the earlier years and care had to be taken that they do not miss out on some vital topics. He also explained to the members that only topics that overlapped with the Applied Component curriculum were deleted from the main course and instead ‘Cell Biology’ and ‘Synthetic Biology’ were added. Dr. Archana Krishnan suggested that Scientific writing should be taught to TYBSc students & also QA QC and regulations should be dealt separately wherein there are taught about the different regulatory bodies. It was agreed by the members that instead of adding, this can be elaborated under the topic on QC already there in the proposed syllabus. Prof Durga suggested addition of ‘Study of biofilm on cathetar’ as a practical.

Ms. Anushree Lokur said that the only change in the TYBSc (Applied Component) – Biotechnology syllabus that we had proposed was to switch over the practical on “Transformation in bacterial cultures” to the Sem V instead of Sem VI as the theory of ‘Introduction of vector into a suitable host’ was covered in Sem V.

Dr. R.P. Phadke then explained that the **M.Sc syllabus** was not modified at all also because the students who joined this course had undergone training under the University pattern. He also said that all the curricula would be revised step wise, up to the PG level, so as to bring in the flow of the subject in the coming years.

All the suggestions made by the members were incorporated in the respective syllabi.

**RESOLVED that: the syllabi for FYBSC, SYBSc, TYBSc, TYBSc (Applied Component) and M.Sc (Part 1), M.sc (part 2) are finalized and approved unanimously after incorporation of the suggestions made by the committee members.**

#### **7. To decide methodology for innovative teaching and evaluation techniques:**

Ms. Urmi Palan informed the members that the College has adopted the 60:40 pattern for evaluation for all the UG and PG courses. Dr. R.P. Phadke then put forth the suggested pattern of internal and external examination for UG and PG courses which was as follows:

**Proposed pattern for FYBSc and SYBSc Externals for each paper under Autonomy (60Mks):**

- i. Duration - These examinations shall be of two hours duration.
- ii. Theory question paper pattern :-
  - a. There shall be four questions each of 15 marks. On each unit there will be one question & fourth one will be based on all the three units.
  - b. All questions shall be compulsory with internal choice within the questions. Each question will be of 30 marks with options.
  - c. Each question will have about 35-45% objective questions.
  - d. The allocation of marks depends on the weightage of the topic.

**Proposed pattern for TYBSC, TYBSc (Applied Component) and M.Sc ( part I and Part II) Externals for each paper under Autonomy (60Mks):**

- i. Duration - These examinations shall be of two hours duration.
- ii. Theory question paper pattern :-
  - a. There shall be four questions each of 12 marks. On each unit there will be one question & fifth one will be based on all the four units.
  - b. All questions shall be compulsory with internal choice within the questions. Each question will be of 24 marks with options.
  - c. Each question may have about 35-45% objective questions.
  - d. The allocation of marks depends on the weightage of the topic.

**Proposed pattern for UG Internals for each paper under Autonomy (40Mks):**

Test	Assignment/ Presentation/ Test/ Project	Attendance	Class Participation	Total
20Mks	10Mks	5Mks	5Mks	40Mks

The 20 marks test would be conducted mid-term by the college. The pattern will be 10 marks objective and 10 marks subjective questions. The topics/ questions under the section for Assignment/ Presentation/ Test/ project will be such that the critical thinking, analytical and creative abilities of the students will be nurtured and enhanced.

**Proposed pattern for PG Internals of each paper under Autonomy (40Mks):**

Presentation	Assignment	Test	Attendance	Class Participatio n	Total

10Mks	10Mks	10Mks	5Mks	5Mks	40Mks
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The test would be conducted mid-term on the basis of the theory portion completed and will have critical thinking/ analytical questions to enhance the thinking ability and enhance the research aptitude of the students.

**RESOLVED that: The examination pattern for Internal evaluation for FYBSC, SYBSc, TYBSc, TYBSc (Applied Component) and M.Sc (Part 1), M.sc (part 2) are finalized and approved.**

- 8. To prepare panel of Examiners for conducting TYBSc, MSc Part I & II Theory & Practical examination & suggest the same to the examination Committee**

Dr. Padma Deshmukh suggested that since the University already had a panel of examiners and moderators, Ruia College under the autonomous status should invite any of these teachers as external examiners for both Practical as well as Theory examinations. Dr. Malik then also suggested that teachers conducting lectures and practicals for respective courses in other autonomous colleges could also be invited.

**RESOLVED that: Finalized and approved that: The College can invite examiners approved by the University / other Autonomous Colleges as external examiners for the Theory and Practical component under the Semester end summative assessment for TYBSc, M.Sc (Part 1), M.sc (part 2).**

- 9. To deliberate and give suggestions for research & extension activities to be conducted in the department for the academic year 2017-18**

Dr. Phadke briefed the members about the various activities conducted under the DBT STAR College program, under the CE program and as extension activities by the department so far and also activities planned for the academic year 2017-18.

Dr. Annamma and Dr. Archana appreciated the activities and proposed that the department should continue these activities. Both of them also offered support for these activities.

- 10. Any other matter with the permission of the chair**

As there was no other matter proposed for discussion by the members, the meeting concluded with Dr. Phadke proposing a vote of thanks to all the committee members.