

**MINUTES OF ZOOLOGY BOARD OF STUDIES (BoS) MEETING HELD ON
22nd SEPTEMBER 2018 AT 1.30 PM**

1. The meeting was chaired by Dr. Roshan D'Souza, Head of Zoology and Chairperson of BoS.
2. The agenda for the meeting was as follows:
 - i) Welcome note and introduction of BoS members
 - ii) Opening remarks by the Head of the department (sharing of vision and objectives implicit in the syllabus).
 - iii) FYBSc - Semester I and II syllabus discussion
 - iv) FYBSc Question paper pattern - Theory and Practical examinations
 - v) SYBSc - Semester III and IV syllabus discussion
 - vi) SYBSc Question paper pattern- Theory and Practical examinations
 - vii) Internal Assessment pattern
 - ix) Names of paper setters and examiners for FY and SYBSc theory and practical examinations.
 - x) Any other matter with the permission of the Chair.
 - xi) Fixing of the next BoS meeting - tentative date.
 - xii) Finalizing the minutes and approval of the same.
- 2) The meeting started at 1.30 pm. Dr. Roshan D'Souza welcomed all for the very first BoS meeting. She introduced all the members of the BoS. She also mentioned that Shri. Vinayak V. Dalvie, The Vice-Chancellor's Nominee was not able to attend the meeting due to unavoidable circumstances and had conveyed telephonically to go ahead with the scheduled meeting and he would be fine with whatever decisions taken.
- 3) The meeting was thus started with the permission of the board.
- 4) Dr. Roshan D'Souza explained the semester pattern, the number of papers, credits for each paper in general for FYBSc and SYBSc. Dr. Roshan D'Souza mentioned that since autonomy was granted almost by the end of July month, the syllabus of SYBSc has been kept the same as that of Mumbai University and only FYBSc syllabus has been revised.
- 5) The FYBSc syllabus was discussed first.
- 6) Shri. Peeyush Pahade enquired if in Paper 1 – Unit 1, the classification was taught till class level and if so, it needs to be mentioned in the syllabus in order to give the clarity of how much in depth this unit should be covered. He further observed that the number of lectures was inadequate if entire invertebrate classification is to be completed in the allotted number of lectures. Ms. Sandhya Kadiru agreed that it is very exhaustive. It was suggested by Shri. Peeyush Pahade that may be it should be divided into two units. He also said that there was no representative animal study at SYBSc, to which Dr. Roshan D'Souza mentioned that for this

academic year the SYBSc syllabus was from the one prescribed by University. But in the next academic year we could think of implementing this suggestion. She also said we will mention in the syllabus that animal classification is there upto class level.

7) Prof. B. B. Nath said that the other two units of Paper 1- Unit 2 Ecosystem and Unit 3- Population ecology are very important and they should not be diluted. However, he recommended that human census in India is not very relevant. Dr. Aldon Fernandes also agreed with both of these recommendations. He also said that since there was no Zoology offered at TYBSc level, there was no need to focus too much on classical zoology.

9) Shri. Peeyush Pahade again stressed that animal studies should be incorporated in the syllabus. Ms. Sandhya Kadiru mentioned that maybe we could explore the possibility of completing the classification of animal kingdom over the two semesters of FYBSc.

10) Dr. Akbar Dalvi observed that the above recommendation was interesting and should be considered.

11) Dr. Roshan D'Souza then introduced the topics of FYBSc Paper 2.

12) Shri. Peeyush Pahade wanted to know the number of students offering zoology. He also wanted to know the teaching methodology.

13) Dr. Roshan D'Souza explained that mostly we use the chalk and talk method. But other methods such as use of ICT, debates etc. are also used as and when feasible.

14) Shri. Peeyush Pahade recommended that case studies of biotechnology applications should be introduced. Dr. Roshan D'Souza informed that case studies are there in the practicals like DNA fingerprinting, cloning etc. Prof. B. B. Nath said that DNA fingerprinting in wildlife conservation also should be stressed upon.

17) Dr. Aldon suggested that certain topics should be introduced: Buffer systems, Production of proteins for therapeutic use, Monoclonal antibodies, Hybridoma, Humanized antibodies, Nephelometry, Turbidometry, Column chromatography, Affinity chromatography.

18) Prof. B. B. Nath pointed out a correction in unit 3 – It should be “Centrifugation” and not “Centrifuge”.

19) Dr. Aldon Fernandes informed that small kits for chromatography are commercially available and hence if that could be tried it would be interesting to conduct such practicals. Dr. Roshan D'Souza agreed to explore the suggestions.

21) Dr. Roshan D'Souza explained the practical paper pattern.

22) Dr. Aldon wanted to know if we taught anything about venomous/non-venomous snakes. He said it was important for people to be informed about it.

- 23) Shri. Peeyush Pahade spoke about the snake rescuing program in his college. Dr. Roshan D'Souza mentioned that we would consider that while framing the future SYBSc syllabus.
- 24) Dr. Roshan D'Souza clarified that there will be no dissection due to UGC regulations.
- 25) Prof. B. B. Nath said that instead of mounting of *Nereis* parapodia, it should be reworded as demonstration of parapodium of *Nereis*.
- 26) Prof. B. B. Nath also clarified that honeybees can be obtained from commercial beekeepers. They should be anaesthetized beforehand, not before students.
- 27) Dr. Roshan D'Souza informed that the proper disclaimer regarding use of animals has been put in the syllabus.
- 28) Dr. Aldon Fernandes requested that biostatistics should be introduced at SYBSc level.
- 29) Dr. Roshan D'Souza explained the marking scheme of internal assessment and semester end examinations.
- 30) Dr. Akbar Dalvi wanted to know why 5 marks are given for attendance.
- 31) Prof. B. B. Nath said that marks for IA (5 marks) cannot be given for students who have less than 75% attendance and hence as per the active participation in the class those marks can be allotted.
- 32) Dr. Akbar Dalvi recommended that visits should be taken to industrial units.
- 33) Dr. Aldon Fernandes suggested that we add HPLC and separation of plasma proteins using cellulose acetate chromatography.
- 34) Prof. B. B. Nath suggested that the students should be exposed to HPLC and flow cytometry.
- 35) Dr. Akbar Dalvi suggested that HPLC could be put under learner's space and also study visit to research laboratory will help students understand the instrumentation unit better.
- 36) Dr. Roshan D'Souza introduced the Semester II syllabus.
- 37) Shri. Peeyush Pahade suggested that cell biology should come first. Then genetics and evolution should be taught.
- 38) Prof. B. B. Nath suggested that biodiversity and evolution should be taught together so that students can understand the link between the two. He also said that it was very important for students to have a good foundation of biochemistry.

39) Dr. Aldon Fernandes said that in ecology, CITES, critically endangered species, Red data book should be introduced. Ms. Sandhya Kadiru said that this suggestion would be incorporated.

40) Dr. Aldon Fernandes recommended that use of biological systems in engineering should be introduced. Prof. B. B. Nath added that the above topics can be termed as bioperspective. He further mentioned that enzymes should be taught as a part of proteins. Therefore, significance of proteins could be rephrased as enzyme structure, properties and significance.

41) Prof. B. B. Nath very kindly offered that he will try and get a POP cast of Trilobite from Mandu.

42) Dr. Aldon Fernandes suggested that under Section 3 – Page 19 of SYBSc syllabus – Project Crocodile and Project Cobra could be included.

43) Prof. B. B. Nath informed that on page 20, there is an error. It should be spelt as Artherosclerosis.

44) Ms. Nazia Chaudhary said that quizzes should be conducted.

45) Dr. Smita Krishnan recommended that under the topic ‘Learning to avoid sickness’ behavioural studies can be done using housefly/cockroach and using acetic acid/acetone/talcum powder/Vaseline as an irritant. Students can study and record the time taken by the animal to remove the irritant. Ms. Sandhya Kadiru liked this suggestion and said she would definitely try to work this out.

46) Dr. Aldon Fernandes and Ms. Nazia Chaudhary said that Bradford’s test and Folin Lowry test should be used for protein tests.

47) Dr. Roshan D’Souza introduced the SYBSc syllabus. She once again informed the committee that the department was following the same syllabus as University of Mumbai.

48) Prof. B. B. Nath suggested that in polygenic inheritance, give example of height in man. He also suggested that prokaryotes transcription should be taught at SYBSc level.

49) Dr. Aldon Fernandes told that mutations should be introduced at SYBSc level.

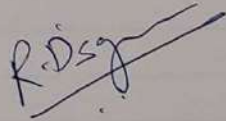
50) Prof. B. B. Nath suggested that apiculture should have recent enemies of honeybees. Dr. Akbar Dalvi and Ms. Sandhya Kadiru confirmed that it is there in the SYBSc syllabus.

51) Prof. B. B. Nath said that a small chapter on sericulture and aquaculture should be introduced.

52) Prof. B. B. Nath pointed out a correction should be done for Barr body experiments. It should be “Study” of Barr body and not “Mounting” of Barr body.

- 53) Prof. B. B. Nath suggested that we should try mitosis with the help of zebrafish eggs using colchicine. He also suggested that onions can be grown till flowering to show meiosis. He said the flowers can be preserved in 75% ethanol.
- 54) Dr. Aldon Fernandes suggested that Bombay blood group should be introduced. He said that impact of antibiotics on production and quality of milk should be introduced.
- 55) Dr. Akbar Dalvi mentioned that pure and hybrid breeds of cows should be introduced. He also said that in Learners' space, we should introduce chocolate making, Gulab jamun etc. Ms. Sandhya Kadiru was positive about this suggestion.
- 56) Prof. B. B. Nath said that on page 16, it is mentioned "Mountings". It should be corrected and mentioned as 'Study'.
- 57) Dr. Roshan D'Souza introduced Semester IV syllabus.
- 58) Shri. Peeyush Pahade said that in honeybees latest parasites should be introduced.
- 59) Prof. B. B. Nath said that in Paper 1-unit 1 Weismann's Germplasm theory should be taught before Modern Synthetic Theory. He also pointed out that it should be Bottleneck and Founder effect, which was mistakenly written as Bottleneck effect and Founder effect. He also said that Paper 1-unit 2, example of directional evolution should not be given in the syllabus.
- 60) Dr. Aldon Fernandes said that in research methodology, Index, Citations, Role of citations, Corresponding author and Conflict of interest should be taught. Prof. B. B. Nath said that importance of keywords should be taught.
- 62) Shri. Peeyush Pahade said that classification unit should be split into two in FYBSc. Type studies of animals could be introduced at SYBSc level.
- 63) Prof. B. B. Nath said that it was important to teach male infertility along with female infertility in order to avoid gender bias. Shri. Peeyush Pahade added that it was important to teach effect of lifestyle on infertility. Prof. B. B. Nath said that amenorrhea was a very crucial problem and should be introduced in the syllabus.
- 64) Dr. Aldon Fernandes said that the impact of pollution on birds, animals etc should be taught. He also said that biomagnification should also be incorporated.
- 65) Dr. Aldon Fernandes said that screening for genetic disorders should be included.
- 66) Prof. B. B. Nath pollution due to plastics should be taught. Shri. Peeyush Pahade said that case studies on pollution should be taught. Dr. Aldon Fernandes said that pollution due to microfibers should be taught.
- 67) Dr. Aldon Fernandes said that a practical for testing antibiotics in milk should be introduced.

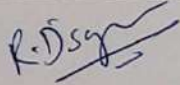
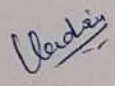

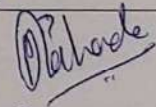
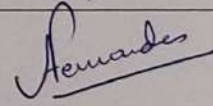
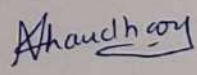
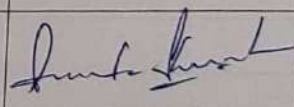

- 68) Shri. Peeyush Pahade said a simple experiment to demonstrate greenhouse should be done using ice blocks and plastic cover.
- 69) Dr. Smita Krishnan said that biodiversity can be studied using acrylic covered with sand and shells can be used.
- 70) Shri. Peeyush Pahade said that biodiversity can be studied by going to field trips and measuring its indices could be done on the field.
- 71) Dr. Aldon Fernandes said that students can read a research paper and give a presentation on it.
- 72) Dr. Smita Krishnan said that we should demonstrate the use of pregnancy kit to them. Dr. Aldon very kindly offered to provide the hCG to conduct the said practical.
- 73) Dr. Roshan D'Souza said that all the suggestions will be incorporated as far as possible.
- 74) The committee also passed the paper pattern. As well as panel of paper setters and examiners.
- 75) The meeting concluded with Dr. Roshan D'Souza along with Ms. Sandhya Kadiru thanking all the members of BoS for giving their time and such valuable suggestions.



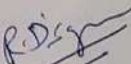

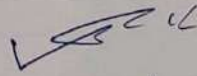
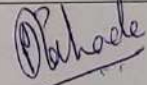
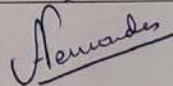
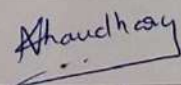
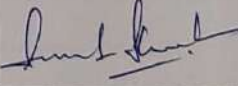
(Dr. Roshan Dsouza)

RESOLUTION

“The Subject Board in ZOOLOGY for Sophia College (Autonomous), hereby approve the syllabus for the course of Zoology of the FYBSc and SYBSc which is being implemented from the Academic Year 2018-19 at the meeting held on 22nd September, 2018”.

Name	Designation	Signature
Dr. Roshan D'Souza	Chairperson, Board of Studies	
Shri. Vinayak V. Dalvie	The Vice-Chancellor's Nominee	
Ms. Sandhya Kadiru	Senior teacher	
Prof. Bimalendu B. Nath	Subject Expert (outside the Parent University)	
Dr. Peeyush Pahade	Subject Expert (outside the Parent University)	
Dr. Aldon Fernandes	Representative from Industry	
Ms. Nazia Chaudhary	Post-graduate alumna	
Dr. Smita Krishnan	Other member of faculty	
Capt.(Dr.) Akbar Dalvi	Other member of faculty	

Attendance Record of meeting of the members of the Zoology Board of Studies held on Saturday 22nd September, 2018 at 1.30 pm in Suman Tulsiani Research Centre Conference Room

Name	Designation	Signature
Dr. Roshan D'Souza	Chairperson, Board of Studies	
Shri. Vinayak V. Dalvie	The Vice-Chancellor's Nominee	—
Ms. Sandhya Kadiru	Senior teacher	
Prof. Bimalendu B. Nath	Subject Expert (outside the Parent University)	
Dr. Peeyush Pahade	Subject Expert (outside the Parent University)	
Dr. Aldon Fernandes	Representative from Industry	
Ms. Nazia Chaudhary	Post-graduate alumna	
Dr. Smita Krishnan	Other member of faculty	
Capt.(Dr.) Akbar Dalvi	Other member of faculty	