

Parvatibai Chowgule College of Arts & Science  
(Autonomous)  
Margao – Goa

**MINUTES OF THE MEETING OF THE BOARD OF STUDIES IN CHEMISTRY**  
held on 25<sup>th</sup> January 2019 at 10:00 A.M.

A meeting of the BOS of Department of Chemistry was hereby convened on 25<sup>th</sup> January 2019 at 10:00 a.m. in the Conference room, Parvatibai Chowgule College of Arts & Science, Margao – Goa. Since the members present represented the quorum, the BOS began its proceedings.

Members present:

1. Dr. Manjita R. Porob – Chairman
2. Dr. J. S. Budkuley - Vice-Chancellor Nominee
3. Dr. J. B. Fernandes – Academic Council Nominee
4. Dr. A. K. Srivastava – Academic Council Nominee
5. Dr. S. P. Kamat – Expert
6. Dr. Vikas Pissurlekar - Expert
7. Dr. Hari Kadam - Postgraduate meritorious alumnus
8. Dr. G. K Naik – Member
9. Dr. Sachin B. Kakodkar – Member
10. Mrs. Padmini C. Panjekar – Member
11. Dr. Lactina R Gonsalves – Member
12. Ms. Mayuri M. Naik - Member Secretary
13. Mrs. Navita D. Naik – Member
14. Mr. Anurag M. Naik – Member
15. Ms. Anagha B. Patil - Member

Members absent:

1. Mr Vishwas Dessai ---- Apologies for absence vide telephonic conversation
2. Dr. Roopa S. Belurkar - **ABSENT**
3. Dr. Rohan K. Kunkalekar - **ABSENT**
4. Dr. Sandesh T. Bugde - **ABSENT**

Proceedings:

At the outset, the new Chairperson Dr. Manjita R. Porob welcomed the B.O.S members for the 6<sup>th</sup> B.O.S meeting and business was transacted as per the agenda.

Agenda items:

1. To approve the syllabi of a) Pharmaceutical Chemistry b) Industrial Chemistry.
2. Approval of Programme specific outcomes and Course outcomes.
3. Recommend methodologies for innovative teaching and evaluation techniques;
4. Coordinate research, teaching, extension and other academic activities in the department/ college.
5. A.O.B.

## Part A: Discussion of agenda

### Course structure

**Dr. Julio Fernandes** suggested that the course titles of core courses of semester III and IV needs to be properly elaborated in the course structure. He also recommended that a separate department handbook can be maintained with all course details and evaluation methodology for a better understanding of the students.

He further opined that there should be proportionate of marks for theory and practical, for which the Head, of the department confirmed that it is already being practised.

Dr. Julio also enquired about the evaluation methodology, which was explained by the Chairperson. The BOS members appreciated the continuous evaluation methodology employed for practical courses.

### Agendum 1(a): To approve the syllabi of

#### 1(a) Industrial Chemistry

**Dr. S. P. Kamat** suggested slight change of words in the unit VI of the proposed Industrial Syllabus.

**Dr. Julio Fernandes** questioned the usefulness of the syllabus to the students as he felt that there was no chemistry as such in the proposed syllabus. He also insisted to rethink about the same and suggested to include electroplating as a part of the said syllabus.

**Dr. S. P. Kamat** opined that the changes suggested by Dr. Julio Fernandes may not be relevant to industries and the syllabus proposed by the department was well balanced.

**Dr. Hari Kadam** suggested for slight reduction of lectures in Unit III of the proposed syllabus and recommended to add corrosion in more detail. He also suggested that the content of the syllabus would be appropriate if there is slight modification of the course title from "Industrial Chemistry" to "Introduction to Industrial Chemistry".

**Dr. S. P. Kamat** also endorsed the recommendations of Dr. Hari Kadam and suggested to slightly change the title and refused the need for drastic changes in the proposed syllabus. He also felt that electroplating as suggested by Dr. Julio Fernandes could be floated as entirely a different elective course.

**Dr. Julio Fernandes** expressed that the course content of the proposed industrial syllabus is not very attractive and progressive, hence students passing out would not be preferred for job by the employers based on this course. Therefore he recommended modification of the said course.

**Dr. Jayant Budkuley** suggested to float minimum 3 courses in industrial chemistry such that chances of employability are more as he felt with just 1 paper, one will not be able to put a student as a qualified industrial candidate. **Dr. S. P. Kamat** expressed his views by saying that the said syllabus would be under general degree of B. Sc. Chemistry and not a specialized degree in industrial chemistry hence to float 3 courses would deprive the students from learning other core topics in chemistry as per the college course structure.

**Dr. Jayant Budkuley** then recommended to rename pharmaceutical chemistry and environmental chemistry as "Industrial Chemistry-2" and "Industrial Chemistry-3" respectively and it should be made compulsory for any student to enrol for minimum of 2 such courses for a better prospect in industries.

**Dr. Vikas Pissurlekar** suggested for reshuffling of the title and the content as he felt that the said syllabus was framed by extracting few topics from different courses on B. Sc. in industrial chemistry. He suggested to include some context on pharmaceutical and paint industry also. Hence he recommended to frame it in a better way as the title industrial chemistry was not justified for the proposed content in his opinion.



**Dr. Julio Fernandes** felt that there was no relevance to the practical content also. He also informed that the same was noted in the minutes of the previous BOS meeting when the said syllabus was first presented in 2015.

**Dr. S. P. Kamat** opined that he does not accept that any drastic change is required in the syllabus as it is well balanced course for general B. Sc. degree and main branches of chemistry are Physical, Organic, Inorganic and Analytical.

**Dr. A. Srivastava** suggested that change of the title to "Selected topics in industrial chemistry" would justify the content and no major changes were required as such.

Finally BOS recommended redesigning/rearrangement of the course. Asked to change the course title and redesign the content.

**Dr. Vikas Pissurlekar** suggested to float more number of electives per semester such that the workload issues of the faculty can be resolved. He also suggested that we can float as many as 10 electives per semester if required.

The chairperson, BOS informed the members that the department may have to float industrial chemistry in the academic year 2019-20 if there is an issue of workload.

**Dr. A. Srivastava** also endorsed the decision of Dr. Vikas of more electives being floated for students.

However, **Dr. S. P. Kamat** expressed that the elective course is a very specialized course and only the faculty who has designed the course can teach the same, so the availability of the specialized staff is very important before floating many elective courses.

**Dr. Julio Fernandes** recommended that the teachers should be regularized, to which the Chairperson informed the members that the department has a fixed frozen workload as given by DHE and any workload above the same needs to be paid by the management and hence the college has difficulty in increasing the frozen workload.

**Dr. Julio Fernandes** also suggested Brainstorming with industrial people (other than pharmaceutical) by conducting 1 day seminar with non-pharmaceutical industries.

The Chairperson informed the members that the said syllabus has to go for approval in the academic council scheduled for March-April 2019, hence there is shortage of time but still the department would work out on the same.

#### 1(b) Pharmaceutical Chemistry

**Dr. Hari Kadam** expressed that only 4 L are from pure chemistry in the entire syllabus hence the title could be changed.

**Dr. Julio Fernandes** suggested that Units I and II are apt for pharmaceutical industry hence need not be changed. He suggested to change Unit III to drug design strategies and general pathways instead of instrumentation which was a part of earlier course. He recommended 2 lectures each reduction from the units of quality control and quality assurance and opined to introduce medicinal chemistry for 2-3 lectures specially with respect to turmeric and garlic. He recommended to club chemistry topics in close vicinity of each other. He also suggested to introduce chromatographic techniques and UV spectroscopy.

**Mr. Anurag Naik** informed that the above techniques were not included as it was already covered in other courses. He also informed that the instruments covered under Unit II are as suggested by the industrial expert, **Vishwas Dessai** who is also a BOS member. He also informed that inclusion of drug design in the syllabus is not recommended by the industrial expert as it is a part of production department and a chemistry graduate or postgraduate does not stand any employability in the production department.

**Dr. S. P. Kamat** also endorsed the information of Vishwas Dessai as conveyed by Anurag Naik stating that handling drug design would also be difficult even for M. Sc. students as the same is a topic of research level.

**Dr. Julio Fernandes** found no relevance of electroanalytical techniques in the pharmaceutical chemistry syllabus. He felt Unit III to be debatable. However, Dr. A. Srivastava and Dr. Jayant Budkuley felt that such techniques are being used in the pharma industry recently and also recommended inclusion of Karl Fischer technique.

**Dr. S. P. Kamat** suggested to take due opinion of Vishwas Dessai before modifying the Unit III of the proposed syllabus.

**Dr. Julio Fernandes** suggested to include more classes of drugs in the syllabus e.g. antidiabetic, anticancer, antipsychotic. He also suggested to add pharmacology in unit I and reshuffle pharmacopoeia after elaboration. He also recommended to elaborate all the uncommon abbreviations used in the syllabus for better understanding.

**Dr. S. P. Kamat** also suggested to include antipyretic and antacid drugs.

**Dr. Vikas Pissurlekar** felt that pharmaceutical chemistry itself is a very vast topic and cannot be clubbed in one course.

**Dr. S. P. Kamat** suggested that as this is general B. Sc. chemistry degree it would not be possible to cover the entire aspects and any changes should go through Vishwas Dessai.

**Dr. A. Srivastava** recommended deletion of 'vendor approval' and 'site file master' from the syllabus.

**Dr. Julio Fernandes** asked to restore the topic VI "introduction to the medicinal chemistry of plants" from the earlier pharmaceutical syllabus if lectures permit.

**Dr. A. Srivastava** asked to reduce 2 L each from QA and QC and these 4 L can be allotted to introduction to the medicinal chemistry of plants.

**Dr. Julio Fernandes** suggested to include the last practical of industrial chemistry in the pharmaceutical chemistry syllabus.

**Dr. S. P. Kamat, Dr. Vikas Pissurlekar and Dr. Jayant Budkuley** recommended to mention that only 7-8 practicals would be conducted.

**BOS members** suggested that 4 experiments of each drug to be conducted as per pharmacopoeia if possible. **Dr. Vikas** recommended 4 synthesis and 4 other pharmaceutical experiments. **BOS members** felt that the listed practicals are in accordance with the proposed theory.

**Dr. Hari Kadam** recommended to include one practical on calibration of UV spectrophotometer. He also asked to mention the minimum number of experiments to be compulsorily carried out in separate experimental sections.

**Dr. Julio Fernandes** also suggested to include ayurvedic drug testing if possible.

**BOS** recommended to list the latest editions in the bibliography and **Dr. A. Srivastava** suggested some crucial books for the said syllabus. It was also recommended to incorporate the changes suggested by the **BOS members** and also the change in Unit III in the syllabus for further feedback from the members.

#### **Agendum 2: Approval of programme specific outcomes and course Outcomes**

Some minor changes were suggested by the **BOS members** which needs to be incorporated in finalizing the course outcomes and the programme specific outcomes.

**Dr. Jayant Budkuley** appreciated the way in which the course outcomes were written by the department.



### Agendum 3: Recommend methodologies for innovative teaching and evaluation techniques

A powerpoint presentation was given by **Dr. Sachin Kakodkar** on POGIL after which the panel discussed over group discussion among students. **Dr. Srivastava** expressed that anything new is always appreciated. **Dr. S. P. Kamat** said that it could be good for understanding but it should be employed for only very few topics and not otherwise.

**Dr. Vikas Pissurlekar** enquired about the practical outcome of the said methodology, to which **Dr. Sachin Kakodkar** answered saying that it is working well.

**Dr. Jayant Budkuley** however expressed that it could work better for a smaller group of students.

### Agendum 4: Coordinate research, teaching, extension and other academic activities in the department/ college

**Dr. Julio Fernandes** suggested to conduct state or national level seminars.

**Dr. Vikas Pissurlekar** recommended to promote research by encouraging teachers to register for Ph. D. and thereby sanctioning them leave under FIP. He also suggested to procure instruments under different funded projects. He said teachers should be also encouraged for conferences, seminars, workshops by sanctioning duty leave. Teachers should be also encouraged to publish research papers in the UGC listed journals.

**Dr. Srivastava** opined that teachers should give presentation to students on upcoming research papers and new discoveries which can be subsequently followed by the students.

**Dr. Julio Fernandes** suggested to conduct an annual alumni (working in industries) meet of the students who have passed out from the college in recent 5 years such that the current students could get an opportunity of dialogue with them and get an idea of the industrial work culture.

**Dr. Hari Kadam** recommended that some light research work to be given to second year B.Sc. students and also an oral presentation competition can be organized.

**Dr. Julio Fernandes** suggested to frame department committees to smoothen the functioning of such work.

**Dr. Hari Kadam** suggested collaboration with various research institutes like NIO, NCAOR, etc. as it would promote inter-disciplinary research.

**Dr. Vikas Pissurlekar** informed about research cluster in which 5 colleges have collaborated for which the minimum requirement is two recognized Ph. D. guides and one post graduate section.

**BOS recommended encouragement for Ph. D's and sanction leave for it.**

### Agendum 5: A. O. B.

**Mrs. Padmini Panjekar** asked for views of the BOS members on conducting spot test for inorganic and organic qualitative analysis.

**The Chairperson, BOS** also endorsed her by saying that lot of chemicals are being wasted for such experiments.

Dr. S. P. Kamat appreciated the thought by saying that microscale is always a good technique as there is lot of cost reduction and helps in regulating environmental pollution. He also expressed his willingness to conduct workshop on microscale if the department and the college is interested and also informed about the funding availability.

The Chairperson thanked the members of the Board of Studies in Chemistry for their valuable contribution and active participation. The meeting ended at 02:15 p.m. with a vote of thanks to the chair.

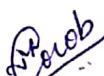
Part B: Resolutions/Recommendations that require consideration/approval of the Academic Council

1. The syllabi of Pharmaceutical Chemistry and Industrial chemistry

Sr. No	Course	Nature of the course	UG level at which offered
1	Industrial Chemistry	Elective	B.Sc (Sem-III)
2	Pharmaceutical Chemistry	Elective	B.Sc (Sem-IV)

2. The course outcomes and the Programme specific outcomes
3. BOS recommended carrying out the experiments on microscale to regulate environmental pollution
4. BOS approved the POGIL teaching methodology only for a smaller group of students
5. BOS recommended to conduct an annual alumni (working in industries) meet of the students who have passed out from the college in recent 5 years such that the current students could get an opportunity of dialogue with them and get an idea of the industrial work culture.

  
Ms. Mayuri Naik  
Member Secretary  
Board of Studies

  
Dr. Manjita R. Porob  
Chairperson  
Board of Studies


Date: 05/02/2019

Part C: The remarks of the Dean of Physical & Earth Sciences

- a. The minutes are in order.
- b. The minutes may be placed before the Academic Council with remarks, if any.
- c. Important points of the minutes which need clear policy decision of the Academic Council to be recorded.

Date: 14/03/19

Signature of the Dean:  
(Physical & Earth Sciences)

  
Dr. Sameena S. Falleiro