

The 56th meeting of the School Board of the School of Sciences was held on 20th May, 2016 at 10.30 a.m. in the Conference Room of Block D, IGNOU, Maidan Garhi, New Delhi – 110068.

The following members were present:

1. Prof. Vijayshri, Director (SOS), Chairperson
2. Prof. R.P. Tandon, University of Delhi
3. Prof. H. B. Srivastava, Banaras Hindu University
4. Prof. Seemi Farhat Basir, Jamia Millia Islamia
5. Prof. K. Barik, SOSS, IGNOU
6. Prof. T. K. Jena, SOHS, IGNOU
7. Prof. Madhu Parhar, STRIDE, IGNOU
8. Prof. S.C. Garg, SOS, IGNOU
9. Prof. B. S. Saraswat, SOS, IGNOU
10. Prof. Parvin Sinclair, SOS, IGNOU
11. Prof. Sunita Malhotra, SOS, IGNOU
12. Prof. Poornima Mital, SOS, IGNOU
13. Prof. Sujatha Varma, SOS, IGNOU
14. Prof. Jaswant Sokhi, SOS, IGNOU
15. Prof. Neera Kapoor, SOS, IGNOU
16. Prof. S.R. Jha, SOS, IGNOU
17. Prof. B. I. Fozdar, SOS, IGNOU
18. Prof. Javed A. Farooqi, SOS, IGNOU
19. Prof. Amrita Nigam, SOS, IGNOU
20. Prof. M.S. Nathawat, SOS, IGNOU
21. Prof. Shubha M. Gokhale, SOS, IGNOU
22. Prof. Lalita S. Kumar, SOS, IGNOU
23. Dr. S. Venkataraman, SOS, IGNOU
24. Dr. Bano Saidullah, SOS, IGNOU
25. Dr. Kamalika Banerjee, SOS, IGNOU
26. Dr. Sanjay Gupta, SOS, IGNOU
27. Dr. Seema Kalra, SOS, IGNOU
28. Shri Prabhat Kumar Sangal

Prof. Rajender Parsad, Prof. S. Kumaresan, Prof. Geeta Kaicker, Dr. Manoj Kulshreshtha, Dr. Vijay Kumar Baraik and Dr. Kakoli Gogoi could not attend the meeting.

At the outset, the Chairperson welcomed the members of the School Board and presented a brief report of the academic activities and achievements of the Faculty members of the School of Sciences during the period April 1, 2015 to March 31, 2016. The School Board was informed that 20 programmes with more than 100 courses were on offer by the School. New courses were under development and 2 existing Physics electives of the B.Sc. Programme had been revised. The Certificate Programme in Laboratory Techniques had been revised and the revised programme was being offered from July, 2016. The following academic contributions of the Faculty of the School of Sciences were reported to the School Board:

- 1) 4 research projects: (Geography – 1, Geology – 1, Life Sciences – 2) being implemented.
- 2) A total of 40 research papers (Biochemistry – 1, Chemistry – 14, Geography – 3, Geology – 4, Life Sciences – 12 and Physics – 6) published in national and international journals. In addition, 1 book published by Prof. M.S. Nathawat from Oxford University Press; one book review (Geography) and 2 project reports (Geology) published.
- 3) Faculty members attended Workshops/Conferences/Seminars (Biochemistry – 5, Chemistry – 2, Geography – 3, Geology – 4 and Mathematics – 1)
- 4) Faculty members delivered Lectures/Talks (Chemistry – 1 and Mathematics – 2)
- 5) Faculty members delivered Keynote Address (Geography – 1 and Mathematics – 2)
- 6) Faculty members Chaired Workshops/Conferences/Seminars (Mathematics – 2)
- 7) Seminars were organised in the School as per details below:
 - i) **Dr. S. Gokhale**, Associate Professor in Physics, School of Sciences, IGNOU, on **Intellectual Property Rights** (April 30, 2015).
 - ii) **Prof. Rakesh Srivastava**, Dept. of Statistics, M. S. University, Baroda, on **Overview of Statistics in Medical Research** (25th May, 2015).
 - iii) **Dr. Suhas Shetgovekar**, Associate Professor in Psychology, School of Social Sciences, IGNOU, on **Stress Management** (21st Aug., 2015).
 - iv) **Dr. Sanjiv Kumar**, Associate Professor in Chemistry, School of Sciences, IGNOU, on **SLM Live** (15th Sept., 2015).
 - v) **Dr. Jyotsna Dikshit**, Director (I/C), NCIDE, on **Designing the SOS Web Page** (Sept. 30, 2015)

- vi) **Prof. J. P. Shrivastava**, Dept. of Geology, University of Delhi, on **Deccan Volcanism** (29th Oct., 2015).
- vii) **Prof. Arif Ali (Retd.)**, Dept. of Biosciences, Jamia Millia Islamia, on **Epigenetics and Gene Expression** (29th March, 2016).
- 8) **National Science Day, 2016** was celebrated by organising
- an invited talk entitled '**Targeting DNA Structure**' on 25th Feb., 2016 by **Dr. Souvik Maiti** who was awarded the prestigious S. S. Bhatnagar Award in 2014 and is currently Principal Scientist, Nucleic Acid Biophysics, CSIR-Institute of Genomics and Integrative Biology, Delhi.
 - an exhibition of paintings, poems, slogans received in a competition for IGNOU students; innovations by IGNOU students and useful products created by recycling waste by children of IGNOU employees, science toys and teaching aids on **Feb. 26, 2016**.
- 9) Dr. Abdul Kareem received VISITING FELLOWSHIP 2015-16, from Jawaharlal Nehru Centre Advanced Scientific Research, Bangalore and Contributed as Global reviewer for Appelings Biochemistry: Concepts and Connections Global edition published by Pearson 2015.

Thereafter, the following items on the agenda were deliberated:

Item No. 1: To confirm the minutes of the 55th meeting of the School Board of the School of Sciences held on December 4, 2015 and to note the action taken thereon.

SB 56.1.1 The School Board was informed that comments from Prof. Poornima Mital had been received on the draft Minutes and no comments had been received on the final Minutes of the 55th meeting of the School Board as circulated on December 30, 2015. The Minutes as circulated on December 30, 2015 were confirmed by the School Board.

SB 56.1.2 The School Board was further informed that letters of dissent with the *rulings* made by the Chairperson in the 55th meeting of the School Board of the School of Sciences had been received from Prof. P.K. Sinclair and Dr. S. Venkataraman. However, the notes of dissent should have been with the *decisions* of the School Board as no rulings had been given by the Chairperson on any matter in the 55th meeting of the School Board of the School of Sciences. Consequently, the Chairperson ruled that the notes of dissent in their present form would not be accepted and made a part of the record of the Minutes of the 55th meeting of the School Board since these should have been notes of dissent with the *decisions* taken by the School Board and not with the Chairperson's rulings.

SB 56.1.3 While noting the action taken on the Minutes of the 55th meeting of the School Board held on Dec. 4, 2015, a query was made as to whether the Director, ACD had been requested to seek confirmation from the UGC (through the Vice Chancellor)

about the total number of credits of the B. Sc. Programme to be offered with three Disciplines under the UGC-CBCS. The Board was informed that the request had been made to the Director (ACD), on January 1, 2016 vide Note No.IG/SOS/55-SB/2016/02 dated January 1, 2016. However, no clarification had been received from the ACD by the Director, School of Sciences, on the matter. The Board advised that the Action Taken Report be modified to reflect the action taken on the matter.

SB 56.1.4 A copy of the confirmed Minutes of the 55th meeting of the School Board of the School of Sciences held on Dec. 4, 2015 (without Annexures) and the Action Taken Report modified as above are placed at **Annexures 1 and 2**, respectively.

Item No. 2: Matters arising out of the minutes.

SB 56.2.1 The following matters arising out of the Minutes were placed for the consideration of the School Board by the Chairperson:

- i) Approval of the syllabus of the compulsory AECC on Environmental Studies for B. Sc. under the UGC-CBCS.
- ii) Status of Courses in B. Sc. under the UGC-CBCS.
- iii) Report on the matter of approval of Phase Zero Form for B. Sc. under the UGC-CBCS by the Academic Council.

The following was reported by the Chairperson to the School Board on the above matters:

SB 56.2.2 **Approval of the syllabus of the compulsory AECC on Environmental Studies for B. Sc. under the UGC-CBCS.**

The School Board was informed that while approving the Phase Zero and Phase 2 Forms for the B. Sc. programme under the UGC-CBCS, the School Board, in its 55th meeting held on Dec.4, 2015, had approved the syllabus of the existing audit course (NEV-001) offered by IGNOU in all its Bachelor's degree programmes as the syllabus of the compulsory Ability Enhancement Core Course on Environmental Sciences for B. Sc. under the UGC-CBCS. In the meanwhile, UGC had placed the syllabus of the course now titled Environmental Studies on its website. The UGC syllabus had been reviewed by the internal course team and some minor changes had been recommended. The syllabus of the 4 credit course on Environmental Studies as finalised by the internal course team was placed for approval in the 16th meeting of the Standing Committee of the School Board held on May 2, 2016. The Standing Committee was informed that the School Board had approved the syllabus of the audit course (NEV-001) in its 55th meeting held on December 4, 2015.

The Standing Committee of the School Board of the School of Sciences recommended that the syllabus of the 4 credit AECC core course on Environmental Studies be placed for the approval of the School Board.

- SB 56.2.3 The School Board discussed the syllabus of the course and recommended minor changes in it: The phrase Environmental Laws under the theme 'PROTECTING OUR ENVIRONMENT: POLICIES AND PRACTICES' be replaced by Environmental Legislation and the specific references to 'Narmada Bachao Andolan' in the syllabus and 'Delhi Ridge' under TMAs be deleted.

The question of the number of credits assigned to the course was also discussed. The syllabus of the course approved by the School Board is placed at **Annexure 3**. The Chairperson informed the Board that as per the instructional template on the UGC website for CBCS, the course was of 4 credits. However, clarification on the number of credits of the course had not been received by the School of Sciences thus far. Therefore, it was decided that if as per information received from the UGC, the course turns out to be of 2 credits, the approval of the School Board will be sought again for the syllabus of a 2 credit course on Environmental Studies.

SB 56.2.4 Status of Courses in B. Sc. under the UGC-CBCS.

While approving the Phase Zero and Phase 2 Forms for the B. Sc. programme to be offered under the UGC-CBCS in its 55th meeting held on Dec. 4, 2016, the School Board had decided that it would like to review the state of preparedness of the School for offering the B. Sc. programme in July, 2016 and accordingly decide the final schedule for launching the B. Sc. programme under UGC-CBCS.

The state of preparedness of courses in the Disciplines of Physics, Chemistry, Botany, Zoology, Mathematics and Geology was presented, respectively, by Dr. Sanjay Gupta, Prof. Lalita S. Kumar, Prof. J. Sokhi, Prof. Neera Kapoor, Dr. Deepika and Dr. B. Deshmukh for the courses in their Disciplines. The reports are placed at **Annexures 4a to e**.

The School Board noted that but for physics, the state of preparedness of courses in the other Disciplines was not upto the mark. The Board was informed that the necessary support sought from the University, by way of working computers, translators, consultants, graphic artists, proof readers, support staff for word processing in English and Hindi, etc. was delayed significantly thereby impacting the progress of work.

As far as the state of preparedness of other Schools was concerned, the School Board was informed that as per the information available with the Director, School of Sciences, the Phase Zero Forms for other UG programmes to be offered under

UGC-CBCS had not been submitted for the approval of the Academic Council in its meeting held on March 21, 2016.

SB 56.2.5 Keeping in view the status of preparedness, the School Board decided that the date of launch for the B. Sc. programme would be July, 2018. The Board reiterated that the B. Sc. programme should not be offered in isolation as courses from other Schools were required in the first semester and from the third semester onwards. The School Board further decided that it would like to ascertain the state of preparedness of the School in July, 2017 for offering the B. Sc. programme to review the schedule for launching the B. Sc. programme under UGC-CBCS in July, 2018, if need be.

SB 56.2.6 **Report on the matter of approval of Phase Zero Form for B. Sc. under the UGC-CBCS by the Academic Council.**

The School Board was informed that with the approval of the Vice-Chancellor, the Phase Zero form for B. Sc. under the UGC-CBCS, approved in the 55th meeting of the School Board of the School of Sciences held on Dec. 4, 2015, was submitted for the approval of the Academic Council in its 65th meeting held on March 21, 2016. In this regard, the following was reported to the School Board by the Chairperson:

After deliberations in the Academic Council, the Phase Zero form was withdrawn for the following reasons:

- The Phase Zero forms for other UG programmes to be offered under UGC-CBCS had not been placed on the agenda and the very first course and other courses in the B. Sc. programme are common with them. Without the approval and inclusion of those courses, it would not be possible to offer B.Sc. in July, 2016. Director (SOS) sought direction from the Chair and the Academic Council on the matter but no direction was given.
- When the Academic Council was specifically requested to spell out whose responsibility it would be if a School was not able to prepare courses and offer a programme in July, 2016 because of lack of facilitation by the University, some members of the Council averred that *it would be the responsibility of the School if any of the courses were not ready in time for offering the programme in July, 2016.*
- At this stage, the Phase Zero form for B. Sc. under the UGC-CBCS was withdrawn by Director, SOS requesting the Council to consider the Phase Zero form for B.Sc. in any of its subsequent meetings when the Phase Zero forms of BA, B.Com. and B.Voc. were placed for its consideration and approval.

Although the Minutes of the Academic Council do not record the above reasons, a letter has been sent to Director, Academic Coordination Division requesting that the reasons be recorded as part of the Minutes (copy of the letter is enclosed at **Annexure 4f**).

The School Board reiterated its decision regarding the date of launch as is stated at SB 56.2.5.

SB 56.2.8 Prof. Sujatha Varma raised the matter of in the syllabus of the course on Calculus approved in the 55th School Board of the School of Sciences for B.Sc. under UGC-CBCS inclusion of the Topic _____ and was of the opinion that it should be deleted. However, since the suggestion of including it had been made by the external member of the School Board from Mathematics who was not present in the 56th meeting, the School Board decided to retain the topic in the syllabus.

Item No. 3: To confirm the Minutes of the 15th and 16th meetings of the Standing Committee of the School Board of the School of Sciences held on April 4, 2016 and May 2, 2016.

SB 56.3.1 The Minutes of the 15th and 16th meetings of the Standing Committee of the School Board held on April 4, 2016 and May 2, 2016, respectively, were placed before the Board for confirmation.

SB 56.3.2 The Minutes of the 15th meeting of the Standing Committee of the School Board held on April 4, 2016 were confirmed as such. The confirmed Minutes are placed (with Annexures) at **Annexure 5**.

SB 56.3.3 The School Board was informed of the decisions taken up in the 16th SBSC meeting held on May 2, 2016. Letters received from two members, namely, Prof. Geeta Kaicker and Prof. Sujatha Varma (Annexures 6a and 6b) were read out. The School Board was informed of the statutory provisions for :

- i) Committees created by a statutory authority [Statute 16(1) and (2)],
- ii) Powers delegated to the SBSC by the School Board in its 44th meeting held on 2nd and 30th March, 2012, and
- iii) process of placing names of course writers for recommendation by the School Board [Statute 10A4(iv)],

which are as follows:

Committees created by a statutory authority [Statute 16(1) and (2)]

- (1) Any authority of the University may appoint as many standing or special committees as it may deem fit, and may appoint to such committees, persons who are not members of such authority.
- (2) Any committee appointed under clause (1) may deal with any subject delegated to it subject to the subsequent confirmation by the authority appointing it.

Powers delegated to the SBSC by the School Board in its 44th meeting held on 2nd and 30th March, 2012

Item no. 4: To ratify the action of the chairperson in getting the list of Expert Committee members; Course Writers and Editors for the PG Diploma in Applied Statistics (with specialization in Industrial/Bio-statistics) courses approved by the Vice Chancellor.

SB 44.4.1 The issue of following statutory provisions regarding all the matters placed before the School Board was raised and it was pointed out that the School Board has taken a decision in the past to follow the Statutory procedures rigorously and that it should adhere to its past decisions. There was a discussion regarding the names of unit writers and editors. Most of the School Board members were of the opinion that the autonomy of discipline must be honored by the Board members. The merits of a single editor for a course were discussed. However, the Statistics discipline explained that depending on the situation, it might be necessary to have different editors for each Block in cases where experts are not willing to edit the entire course.

To expedite the routine matters the Chairperson suggested that as per Statute 16 (1) & (2) a Standing Committee can be constituted to consider and approve the names of expert committee members, course writers, paper setters, evaluators and moderators. Besides these, this Standing Committee can also consider several other issues that have already been deliberated in Doctoral Committees of disciplines such as progress reports of students, approvals of names of external supervisors etc.

SB 44.4.1 The School Board decided to constitute a Standing Committee of the School Board of the School of Sciences. It was decided that henceforth, all such matters will first be deliberated in the School Board Standing Committee (SBSC) meeting and become part of the reporting items for the School Board. The Standing Committee will be chaired by the Chairperson of the School Board and will consist of one member from each discipline. The Standing committee is authorized to include subject experts as Special Invitees as and when required. The term of the committee will be for two years. The first standing committee was constituted with the following members:

1. Director of the School	-	Chairperson
2. Prof. S C Garg	-	Physics Discipline
3. Prof. B S Saraswat	-	Chemistry Discipline
4. Prof. S S Hasan	-	Life Sciences Discipline
5. Prof. Poornima Mital	-	Mathematics Discipline
6. Prof. M S Nathawat	-	Geography Discipline
7. Dr. Meenal Mishra	-	Geology Discipline
8. Dr. Parvesh Bubbar	-	Biochemistry Discipline
9. Mr. Rajesh Kaliraman	-	Statistics Discipline

Process of placing names of course writers for recommendation by the School Board [Statute 10A4(iv)]

To recommend to the Vice-Chancellor names of course writers, examiners and moderators for different courses on the proposal of the Director of the School prepared in consultation with the Professors of the disciplines assigned to the School.

The extracts of relevant portions of the IGNOU Act and Minutes of the 44th Meeting of the School Board are placed at Annexures 6 c, d and e.

SB 56.3.4 While deliberating upon SBSC 16.3.2 of the Minutes, the School Board approved the criteria proposed for identification of experts as Observers for Lab courses as given below. The Board further authorised the Director (SOS) and the Discipline Groups concerned to identify Observers as per the above criteria. The list of Observers would be updated and reported to the School Board. The list of observers identified thus far on the basis of these criteria is appended (Annexure ___) of the 16th meeting of SBSC. The Board further decided that the letters appointing observers at a Study Centre would be issued by the Director (SOS) on receipt of the schedule of conduct of Lab courses at that Study Centre.

Since the activity had financial implications by way of payment by the Regional Centres, the Board advised that necessary financial approvals be taken from the competent authority.

SB 56.3.5 During the deliberations on SBSC 16.7.2 with specific reference to the decision of SBSC not recommended the names of Mathematics Faculty members as Course writers, the School Board was informed that due statutory provisions vide Statute 10A 4(iv) were followed and the Professors assigned to Mathematics were requested many times to give names of internal course team members course coordinators. However, the information was not provided under various pretexts.

Therefore, the proposal was placed for the recommendations of the SBSC by the Director.

SB 56.3.6 The School confirmed the decision of the Standing Committee on the matter by a majority. Two external members of the Board did not agree with the decision of the SBSC.

Prof. S. C. Garg dissented strongly with the decision confirming the decision taken in 16th SBSC meeting, vide SBSC 16.7.2 to not recommend the names of Mathematics Faculty of IGNOU as course writers for the Mathematics courses to be offered from Semester 3 to Semester 6 in B. Sc. under the UGC-CBCS.

SB 56.3.7 The Minutes of the 16th meeting of the School Board Standing Committee with Annexures were confirmed with the above observations and are placed at **Annexure 6f.**

Item No. 4: To consider and approve the list of examiners for the evaluation of the Ph.D. thesis of Ms. Sangeeta Singla (118701670), registered in the Ph.D. programme in Chemistry.

SB 56.4.1 For the sake of confidentiality, the list of examiners of the Ph.D. thesis of Ms. Sangeeta Singla, Ph.D. Scholar in Chemistry (Enrolment No. 118701670) working under the joint supervision of **Dr. K. Banerjee**, Associate Professor, School of Sciences, IGNOU and **Dr. Pramod Kumar Singh**, Associate Professor, Kirori Mal College, University of Delhi on the topic "Isolation, Characterisation of Transition Metal Complexes" was read out for the approval of the School Board. The details of the Scholar are as follows:

Details of Ms. Sangeeta Singla

1. Enrolment No.: **118701670**
2. Date of Registration: **February 2012, July 2011 cycle.**
3. Topic: **Isolation, Characterisation of transition metal complexes.**
4. Supervisor(s):

Dr. K. Banerjee, (Internal Supervisor)

Assoc. Professor, School of Sciences
IGNOU, New Delhi

Dr. Pramod Kumar Singh (External Supervisor)

Associate Professor, Kirori Mal College, University of Delhi

5. Date of Pre-Ph.D. thesis submission seminar before Doctoral Committee: **29th January 2016.**
6. Publications: Three (details below)

- (i) Pramod Kumar Singh, K. Banerjee, Sangeeta Singla, "Synthesis and Spectral Studies on Transition Metal Complexes of some Aroyl Hydrazone Ligands." IJBSAC, Vol. 1, Issue 2, 2014. "International Journal of Basic Sciences and Applied Computing" ISSN: 2394-367X (online),
- (ii) K. Banerjee, Pramod Kumar Singh, Sangeeta Singla "Spectral studies on transition metal complexes with novel tridentate aroylhydrazones" IJSRP, Vol. 5, Issue 2, Feb.2015." International Journal of Scientific and Research Publications" ([IJSRP](#)) ISSN: 2250-3153 (online),
- (iii) Pramod Kumar Singh, K. Banerjee, Sangeeta Singla,"Synthesis and spectral characterization of Cu(II) complexes of Tridentate ONO donor hydrazones." IJETMAS, Volume 3, Issue 7, July 2015, , ISSN 2349-4476." International Journal of Engineering Technology, Management and Applied Sciences" ([IJETMAS](#)) ISSN 2349-4476.

SB 56.4.2 The School Board approved the list of examiners and advised that the approved list of examiners should not be circulated as a part of the Minutes but be forwarded confidentially to the Research Unit.

Item No. 5: To consider and approve the list of examiners for the evaluation of the Ph.D. thesis of Mr. Anuj Prakash (122878105), registered in the Ph.D. programme in Chemistry.

SB 56.5.1 For the sake of confidentiality, the list of examiners of the Ph.D. thesis of Mr. Anuj Prakash, Ph.D. Scholar in Chemistry (Enrolment No. 122878105) working under the joint supervision of **Prof. J. A. Farooqi**, School of Sciences, IGNOU and **Dr. Anil Teotia**, Senior Scientific Officer, Indian Pharmacopeia Commission, Ministry of Health and Family Welfare, Ghaziabad on the topic "Analysis of Genotoxic Impurities in Active Pharmaceutical Ingredient related to Antiretroviral by using Modern Analytical Techniques" was read out for the approval of the School Board. The details of the Scholar are as follows:

Details of Mr. Anuj Prakash:

1. Enrolment No.: **122878105**
2. Date of Registration: **December 2012, January 2012 cycle.**
3. Topic: **Analysis of Genotoxic Impurities in Active Pharmaceutical Ingredient related to Antiretroviral by using Modern Analytical Techniques**
4. Supervisors:
Prof. Javed A Farooqi (Internal)

School of Sciences

IGNOU, New Delhi

Dr. Anil Teotia (External)

Senior Scientific Officer,

Indian Pharmacopeia Commission,

Ministry of Health and Family Welfare

Ghaziabad 201002

5. Date of Pre-Ph.D. Thesis submission Seminar: **10th February, 2016**

6. Publications: **Three (details below)**

- (i) Anuj Prakash, Anil K Teotia, Javed A. Farooqi and GN Singh. *Forced Degradation Study of Lamivudine under the Scope of Genotoxic Impurity*. World Journal of Pharmacy and Pharmaceutical Sciences, 2015, 4(06): 1032-1041
- (ii) Anuj Prakash, Utpal Nandi, Anil K Teotia, Javed A. Farooqi and GN Singh. *Forced Degradation Study of Emtricitabine for Evaluation of Genotoxic Impurity in Active Pharmaceutical Ingredient's (API) Shelf Life*. World Journal of Pharmacy and Pharmaceutical Sciences, 2015, 4(07):1909-1919
- (iii) Anuj Prakash, Anil K Teotia, Javed A. Farooqi and GN Singh. *Forced Degradation Study of Abacavir Sulphate under the Scope of Genotoxic Impurity*. Indian journal of Chemistry-Section B, 2015 (in press).

SB 56.5.2 The School Board approved the list of examiners and advised that the approved list of examiners should not be circulated as a part of the Minutes but be forwarded confidentially to the Research Unit.

Item No. 6: To consider and approve the list of examiners for the evaluation of the Ph.D. thesis of Mr. Y. Srinivasa Rao (112247220), registered in the Ph.D. programme in Chemistry.

SB 56.6.1 For the sake of confidentiality, the list of examiners of the Ph.D. thesis of Mr. Y. Srinivasa Rao, Ph.D. Scholar in Chemistry (Enrolment No. 112247220) working under the joint supervision of **Prof. Lalita S. Kumar**, School of Sciences, IGNOU and **Dr. P.V. Anantha Lakshmi**, Associate Professor, Dept. of Chemistry, University College of Women, Osmania University, Koti, Hyderabad on the topic "The Role of Polymorphism, Impurity Profile and Co-Crystal Development in Pharmaceutical Industry" was read out for the approval of the School Board.

Details of Mr. Y. Srinivasa Rao

1. Enrolment No. : 112247220
2. Date of Registration : May, 2011

3. Topic: : *"The Role of Polymorphism, Impurity Profile and Co-Crystal Development in Pharmaceutical Industry"*

4. Supervisor(s): : 1. Prof. Lalita S. Kumar (Internal Supervisor)
School of Sciences, IGNOU
Maidan Garhi, N. Delhi-110068
Email: lalitaskumar@ignou.ac.in
2. Dr. P.V. Anantha Lakshmi (External Supervisor)
Associate Professor,
Department of Chemistry
University College of Women
Osmania University, Koti, Hyderabad
Email: ananthaprasad2003@yahoo.co.in

5. Pre-PhD Thesis submission seminar: 27th April, 2016

6. Number of papers published: Three

SB 56.6.2 The School Board approved the list of examiners and advised that the approved list of examiners should not be circulated as a part of the Minutes but be forwarded confidentially to the Research Unit.

Item No. 7: To consider and approve the Minutes of the Expert Committee meeting held on 23rd February, 2016 to evolve guidelines for the conduct of the practical examination and other issues related to student support of the Post Graduate Certificate in Geoinformatics (PGCGI) programme.

SB 56.7.1 The School Board was informed that the Post Graduate Certificate in Geoinformatics (PGCGI) programme is on offer from the July 2014 admission cycle and issues related to student support and term-end examinations of the Practical course have come up during its implementation. An Expert Committee meeting was held on 23rd February, 2016 to evolve guidelines for conducting the practical examination and other issues related to student support of the Post Graduate Certificate in Geoinformatics (PGCGI) programme. The Minutes of the meeting of the Expert Committee (**Annexure 7**) and the guidelines recommended by the Expert Committee that were a part of the Minutes of the meeting, were placed for the consideration of the School Board.

SB 56.7.2 After detailed deliberations, the School approved the following guidelines for conducting the practical examination and other issues related to student support of the Post Graduate Certificate in Geoinformatics (PGCGI) programme:

(a) **Requirements for conducting practical counselling:**

The Study Centres should be equipped with computers, aerial photographs, stereoscopes, sample data and maps. Sample data can be provided to the SCs by the School, if not available.

However, the School Board cautioned that sufficient care should be taken by the Programme team that sample data provided by them is not in violation of any law of the land and so that the University, the School and the Faculty members of Geology do not get into any controversy or legal implications.

(b) **Eligibility Criteria for Academic Counsellors and Programme-in-Charge:**

It was recommended that Academic Counsellors should have the following qualifications and experiences:

Masters in 'Remote Sensing & GIS'/ Geomatics/ Geoinformatics/ Geospatial Technology/ Computer Science/ Information Technology/ Physics/ Mathematics/ Life Sciences/ Environmental Studies/ Geography/ Geology/ Agriculture/ Soil/ Forestry or allied disciplines

with

At least two years of teaching/research experience in remote sensing and GIS.

Eligibility criteria for **programme in-charge** will be as follows:

Masters in 'Remote Sensing & GIS'/ Geomatics/ Geoinformatics/ Geospatial Technology/ Computer Science/ Information Technology/ Physics/ Mathematics/ Life Sciences/ Environmental Studies/ Geography/ Geology/ Agriculture/ Soil/ Forestry or allied disciplines

with

At least four years of teaching/research experience in remote sensing and GIS.

(c) **Number and Duration of the Counselling Sessions:**

The number and duration of counselling sessions for the three theory courses should be 8 hours per course worth 4 credits each.

Sessions for the practical course should be conducted over a maximum of six days with two sessions of 4 hours each per day. There should be mandatory attendance of minimum 70% in the scheduled practical counselling sessions for the candidates in order that they are eligible to appear in the term-end practical examination.

(d) **Software:**

At present, practicals of the course are based on two softwares, namely, QGIS and ILWIS. In future, at the time of revision, lab manual may be based on QGIS s/w for GIS related practical exercises. SAGA s/w may be used for image processing activities in place of ILWIS s/w, wherever relevant.

The Lab manual may be prepared in electronic version instead of hard copy to save time and cost of the University for its development and distribution since it may require more frequent updating on account of the changes in the software versions.

(e) **Evaluation Modalities:**

The following evaluation modalities be followed for the practical course of the PGCGI programme:

- Evaluation for the practical course would contain two components i.e. *continuous assessment* and *term-end practical examination* with 70% and 30% weightages, respectively.
- Evaluation of continuous assessment component would be based on the practical records. Guidelines for evaluating practical records would be provided by the IGNOU Course team and these should contain evaluation of *performance, practical record* and *viva-voce*.
- Students would be required to maintain a record of the practical exercises performed every day, which would need to be evaluated for each exercise as per the guidelines given in the Counsellor's manual and submitted prior to the term-end practical examination.
- Term-end examination for the Lab course (i.e. MGYL-004) would be conducted on a specified date across India. Question paper for the same would be prepared and distributed to the exam centres in advance as per the practice followed for theory courses. The exam question(s) concerning processing and creation of data may be based on the sample datasets given to the SCs by the School in advance at the start of the session with due caution about sample data as stated above being exercised.
- The Term-end Lab Examination will comprise *term-end examination paper* and *Viva-Voce* worth 25 and 5 marks, respectively.
- Learners would be required to pass in both the continuous and Term-end Lab Examination components separately with minimum 35% marks to successfully complete the practical course.
- An external examiner should be appointed by the University for the Term-end Examination from the list approved by the Vice-Chancellor on the recommendation of the School Board, as far as possible. A counsellor may act as an external examiner, provided he/she is not associated with the lab counselling for the same course/institution. All answer sheets should be evaluated by the external examiner on the basis of the marking scheme given for the paper.

- Remuneration/Honorarium to the Academic Counsellors and Examiners, etc. be paid as per the norms of the computer based programmes such as BCA.
- 10% (minimum 2) of the evaluated practical records from each Study Centre should be sent to the headquarters for monitoring purpose.
- The minimum number of students required for conducting practical counselling sessions at Study Centres may be as per IGNOU norms for similar courses.

Item No. 8: To consider and approve the proposal for modifying the existing requirements for conduct of Laboratory courses of the programme “Post Graduate Diploma in Applied Statistics”.

SB 56.8.1 The School Board was informed that an Expert Committee meeting was held on May 25, 2015 to discuss the format, pattern and evaluation methodology of the Continuous Assessment and Term-end examination of the lab courses of the programme “**Post Graduate Diploma in Applied Statistics**”. The minutes of the Expert Committee meeting were approved by the School Board in its 54th meeting held on Sept. 3, 2016.

The School Board was further informed of the experience of the faculty members of Statistics while conducting the lab course at SC-0750 in Delhi since January 2015 that learners taking admission in the programme are mostly in-service professionals who are highly motivated and interested in learning. They were capable of completing most exercises at their workplace/residence. In view of feedback and learner capability of completing the lab sessions, it was proposed by the Programme Team that the maximum number of Lab sessions be reduced from the existing 12 sessions (6 days) to 6 sessions (3 days) for each lab course. Correspondingly, compulsory attendance of learners may be reduced from the existing 4 sessions (2 days) to 2 sessions (1 day) at the Study Centre to demonstrate their capabilities and for continuous assessment of their work.

SB 56.8.2 The School Board discussed the proposal in detail and decided that the maximum number of Lab sessions should be 6 sessions (3 days) for each lab course and compulsory attendance of learners should be 2 sessions (1 day) at the Study Centre for demonstrating their capabilities and for continuous assessment of their work.

Item No. 9: To consider and approve the Minutes of the Expert Committee meetings held on 23rd February, 2016, 4th March, 2016 and 11th March, 2016, respectively, to finalise the syllabi of the following courses in Geology for the B.Sc. Programme under the UGC-CBCS:

- (i) **Discipline Specific Elective Courses (DSE) entitled “Geomorphology and Geotectonics” and “Ore-Geology and Industrial Minerals”,**

(ii) Skill Enhancement Courses (SECs) entitled “Basics of Geographic Information System” and “Application of Geographic Information System”.

- SB 56.9.1 The School Board was informed that the Expert Committee meetings for four courses in Geology were held on 11th March, 2016, 4th March, 2016 and 23rd Feb., 2016, respectively, to design the syllabi of the Discipline Specific Electives entitled “Geomorphology and Geotectonics”, “Ore Geology and Industrial Minerals” and two Skill Enhancement Courses (SECs) entitled “Basics of Geographic Information System” and “Application of Geographic Information System” in the B.Sc. Programme under UGC-CBCS.
- SB 56.9.2 The Minutes of the meetings and the syllabi of the courses finalised in the meetings placed at **Annexures 8a to c** were approved by the School Board of the School of Sciences.
- Item No. 10: To consider and approve minor changes in two Core Courses entitled “Crystallography, Mineralogy and Economic Geology” of Semester II and “Stratigraphy and Palaeontology” of Semester IV in Geology in the B.Sc. Programme under the UGC-CBCS.**
- SB 56.10.1 The School Board was informed that the syllabi of four Core Courses in Geology in the B.Sc. Programme under UGC-CBCS were approved in the 55th meeting of the School Board of the School of Sciences held on 4th December, 2015 (vide SB 55.6.1 and SB 55.6.2).
- SB 56.10.2 As per the syllabi prescribed by UGC for the practical components of the Core Courses, fieldwork is an essential component in only the second semester Core Course entitled “Crystallography, Mineralogy and Economic Geology” for three days duration (**Annexure 9a**). It was proposed by the Faculty of Geology that fieldwork be included in the Core Courses to be offered in the first and third semesters for a total of four days with two days in each Course. It was further proposed that the fieldwork component approved in the 55th meeting of the School Board for all four Core Courses of Geology be modified and excluded from the two Core Courses to be offered in the second and fourth semesters.
- SB 56.10.3 The modified syllabi of the two Core Courses entitled “**Crystallography, Mineralogy and Economic Geology**” and “**Stratigraphy and Palaeontology**” to be offered in Semesters 2 and 4, respectively, were approved by the School Board and are placed at **Annexures 9b and c**.

Item No. 11: To consider and approve the minutes of the Expert Committee meeting held on April 11, 2016 for the PG Diploma in Geospatial Analysis and Modelling.

SB 56.11.1 The School Board was informed that the Phase 1 Form for the PG Diploma in GeoSpatial Analysis and Modelling had been approved by the Academic Programme Committee. Thereafter, a meeting of the Expert Committee for the programme as approved by the School Board was held on 11.04.2016 to finalize the overall structure and detailed syllabi of the courses of the programme.

SB 56.11.2 The Minutes of the meeting were approved by the School Board of the School of Sciences and are placed at **Annexure 10**.

Item No.12: To consider and approve the Minutes of the Expert Committee meeting held on November 24, 2015 for B.Sc. with Geography as one subject under the UGC-CBCS.

SB 56.12.1 The School Board was informed that the meeting of the Expert Committee for the B.Sc. Programme with Geography as one subject and B.Sc. (Hons.) in Geography, in accordance with the UGC-CBCS, was held on 24-11-2015. The list of the courses in Geography for B.Sc. under the UGC-CBCS and their detailed syllabi were finalised in the meeting.

SB 56.12.2 While deliberating on the Minutes of the meeting and the syllabi of the Courses, the School Board recommended that a uniform policy for the delivery of tutorials should be evolved by the University after thorough discussion.

SB 56.12.3 The Minutes of the meeting along with the syllabi of the courses in Geography for B.Sc. under UGC-CBCS finalised in the Expert Committee meeting held on November 24, 2015 were approved by the School Board of the School of Sciences with the observations at SB 56.12.2 and are placed at **Annexure 11**.

Item No. 13: To consider and approve the Phase 1 Form for the B.Sc. (Hons.) programme in Geography.

SB 56.13.1 The School Board was informed that in its 55th meeting held on Dec. 4, 2015, the School Board had decided vide SB 55.9.2 that the process of holding meetings of the Programme Expert Committees, approved by the School Board in its 54th meeting vide SB 54.10.1, for the B. Sc. (Hons.) programmes in various Disciplines should be initiated so that the B. Sc. (Hons.) programmes in those Disciplines, compliant with the UGC-CBCS, may be offered in due course of time.

SB 56.13.1 In accordance with the statutory processes and procedures approved by the Planning Board of IGNOU, the Phase 1 Form for the B.Sc. (Hons.) programme in

Geography was deliberated upon. The Phase 1 Form approved by the School Board of the School of Sciences is placed at **Annexure 12**.

Item No. 14: To consider and approve the Minutes of the Programme Expert Committee meeting held on April 8, 2016 for the programme B.Sc. (Hons.) in Geography.

SB 56.14.1 The School Board was informed that the meeting of the Expert Committee Meeting of B.Sc. (Hons.) in Geography in accordance with UGC-CBCS was held on April 8, 2016 to finalize the overall structure, list of courses and syllabi of the courses of B.Sc. (Hons.) in Geography.

SB 56.14.2 The Minutes of the meeting along with the broad syllabi of the courses of the programme finalised in the meeting were approved by the School Board of the School of Sciences and are placed at **Annexure 13**.

Item No. 15: To consider and approve the Phase 1 Form for the B.Sc. (Hons.) programme in Biochemistry.

SB 56.15.1 The School Board was informed that in its 55th meeting held on Dec. 4, 2015, the School Board had decided vide SB 55.9.2 that the process of holding meetings of the Programme Expert Committees, approved by the School Board in its 54th meeting vide SB 54.10.1, for the B. Sc. (Hons.) programmes in various Disciplines should be initiated so that the B. Sc. (Hons.) programmes in those Disciplines, compliant with the UGC-CBCS, may be offered in due course of time.

SB 56.15.2 In accordance with the statutory processes and procedures approved by the Planning Board of IGNOU, the Phase 1 Form for the B.Sc. (Hons.) programme in Biochemistry placed at **Annexure 14a** was considered by the School Board of the School of Sciences.

SB 56.15.3 After detailed deliberations, the School Board approved the modified Phase 1 Form for the B.Sc. (Hons.) programme in Biochemistry. The approved Phase 1 Form along with its annexures is placed at **Annexure 14b**.

Item No. 16: To consider and approve the Minutes of the Programme Expert Committee meeting held on April 7, 2016 for the B.Sc. (Hons.) programme in Biochemistry.

SB 56.16.1 The School Board was informed that the meeting of the Expert Committee meeting of B.Sc. (Hons.) in Biochemistry in accordance with UGC-CBCS was held on April 7, 2016 to finalize the overall structure, list of courses and syllabi of the courses of B.Sc. (Hons.) in Biochemistry.

SB 56.16.2 The Minutes of the meeting along with the syllabi of the courses of the programme finalised in the meeting were approved by the School Board of the School of Sciences and are placed at **Annexure 15**.

Item No. 17: To consider and approve the Minutes of the Expert Committee meeting for the course “Coding Theory” (MMTE-005) of the M.Sc. (MACS) programme and the Phase Zero form for the course.

SB 56.17.1 The School Board was informed that Coding Theory (MMTE-005) is a 4-credit elective course of the M.Sc. (MACS) programme which is presently on offer as a wrap-around course. The course is now to be developed as self contained, self learning material. An Expert Committee meeting was held to discuss and unitize the syllabus of the course on 21st and 22nd May, 2015 in the School of Sciences. The Minutes of the Expert Committee meeting along with the unitised syllabus and the Phase Zero Form were placed for approval of the School Board (**Annexure-16**).

SB 56.17.2 Due to the delay in the submission of Phase-Zero form, instead of the schedule for receiving the units proposed in the enclosed minutes, the following schedule was proposed for course development:

1. Units 1, 4 and 6 by the end October, 2016.
2. Units 2, 5 and 7 by the end of November, 2016.
3. Units 8, 9 and 10 by the end of December, 2016.
4. Units 11 and 12 by the end of January, 2017.

Accordingly the date of launch was proposed in the Phase Zero form as July, 2018.

SB 56.17.3 The School Board observed that the Phase Form was incomplete and the syllabus was not presented as per the norms advised by the Board. Further, questions about the placement of practical exercises, schedule of course writing, etc . were not answered to the satisfaction of the Board.

SB 56.17.4 The Minutes of the meeting were not approved by the School Board of the School of Sciences. However, the Phase Zero Form for the course along with its syllabus was not approved by the School Board. Further, the Course Coordinator was advised to submit a separate agenda item in a future School Board meeting for recommending the names of the course writers for the course for the approval of the Vice-Chancellor.

Item No. 18: Any other item with the permission of the Chair.

- (i) **To consider and approve the minutes of the Doctoral Committee meeting held on 17th May, 2016**

SB 56.18.1(i) The School Board was informed that a meeting of the Doctoral Committee for Chemistry was held on 20.05.2016 to assess the pre-Ph.D. thesis submission seminar of Ms. Swati Pal (112247212). The seminar was found to be satisfactory by the Doctoral Committee and it was recommended that she may be permitted to submit her Ph.D. thesis.

SB 56.18.1(ii) The minutes of the Doctoral Committee meeting were approved by the School Board of the School of Sciences and are placed at **Annexure 17**.

(ii) To consider and approve the names of the examiners for the evaluation of thesis of Ms. Swati Pal (112247212), research scholar of Ph.D. programme in Chemistry.

SB 56.18.2(i) For the sake of confidentiality, the list of examiners of the Ph.D. thesis of **Ms. Swati Pal**, Ph.D. Scholar (Enrolment No. **112247212**) working under the joint supervision of **Prof. Sunita Malhotra** and **Prof. S.N. Naik** on the topic **“Supercritical Extraction of Cosmoceutical/Nutraceutical ingredients from Indian Medicinal Plants”** was read out for the approval of the School Board. The details of the scholar are as under:

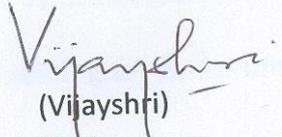
Details of Ms. Swati Pal

1. Enrolment No.: **112247212**
2. Date of Registration: **24th May 2011, January 2011 cycle.**
3. Topic: **Supercritical Extraction of Cosmoceutical/Nutraceutical ingredients from Indian Medicinal Plants.**
4. Supervisor(s):

Prof. Sunita Malhotra (Internal Supervisor)
Professor, School of Sciences
IGNOU, New Delhi
and
Prof. S.N. Naik (External Supervisor)
CRDT, IIT, Delhi
5. Date of Pre-Ph.D. thesis submission seminar before Doctoral Committee: **17th May, 2016.**
6. Publication: One (detail below)
Swati Pal, Sunita Malhotra, Satyanarayan Naik, “Development of Cosmeceutical Products from Nano-Sized Active Colour Constituents of Ratanjot, Seabuckthorn and Annatto”, International Journal of Pharmacy and Pharmaceutical Sciences, Vol 8, Issue 5, 2016, ISSN- 0975-1491

SB 56.18.2(ii) The School Board approved the list of examiners and advised that the approved list of examiners should not be circulated as a part of the Minutes but be forwarded confidentially to the Research Unit.

The meeting ended with a vote of thanks to the Chair.



(Vijayshri)
Chairperson

List of Annexures

- Annexure 1** Minutes of the 55th meeting of the School Board of the School of Sciences.
- Annexure 2** Action Taken Report on the minutes of 55th meeting of the School Board of the School of Sciences.
- Annexure 3** Syllabus of the compulsory AECC on Environmental Studies for B. Sc. under the UGC-CBCS.
- Annexures 4a to e** Status of Courses in B. Sc. in various Disciplines under the UGC-CBCS as reported to the School Board.
- Annexure 5** Minutes of the 15th meeting of the Standing Committee of the School Board of the School of Sciences held on April 4, 2016.
- Annexure 6** Minutes of the 16th meeting of the Standing Committee of the School Board of the School of Sciences held on May 2, 2016.
- Annexure 7** Minutes of the Expert Committee meeting held on 23rd February, 2016 to evolve guidelines for the conduct of the practical examination and other issues related to student support of the Post Graduate Certificate in Geoinformatics (PGCGI) programme .
- Annexures 8a to c** Minutes of the Expert Committee meetings held on 23rd February, 2016, 4th March, 2016 and 11th March, 2016 of Geology.
- Annexure 9a** Syllabi prescribed by UGC for the Core Courses, “Crystallography, Mineralogy and Economic Geology” and “**Stratigraphy and Palaeontology**”
- Annexures 9b and c** Modified syllabi of the Core Courses in Geology entitled “**Crystallography, Mineralogy and Economic Geology**” and “**Stratigraphy and Palaeontology**” for B.Sc. under UGC-CBCS.
- Annexure 10** Minutes of the Expert Committee meeting held on April 11, 2016 for the PG Diploma in Geospatial Analysis and Modelling.
- Annexure 11** Minutes of the Expert Committee meeting held on November 24, 2015 for B.Sc. with Geography as one subject under the UGC-CBCS.
- Annexure 12** Phase 1 Form for the B.Sc. (Hons.) programme in Geography.
- Annexure 13** Minutes of the Programme Expert Committee meeting held on April 8, 2016 for the programme B.Sc. (Hons.) in Geography.

- Annexure 14a** Phase 1 Form for the B.Sc. (Hons.) programme in Biochemistry.
- Annexure 14b** Phase 1 Form for the B.Sc. (Hons.) programme in Biochemistry approved by the School Board..
- Annexure 15** Minutes of the Programme Expert Committee meeting held on April 7, 2016 for the B.Sc. (Hons.) programme in Biochemistry.
- Annexure 16** Minutes of the Expert Committee meeting for the course “Coding Theory” (MMTE-005) of the M.Sc. (MACS) programme and the Phase Zero form for the course.
- Annexure 17** Minutes of the meeting of Doctoral Committee for Chemistry held on 17th May, 2016.