

## Board of Studies, Mathematical Sciences, HBNI

Minutes of the meeting held at IMSc  
on 4th November 2016 at 1130 am

**Agenda: To discuss syllabus and credit requirements for Ph.D. and Integrated Ph.D. Programmes of I.M.Sc**

Members present :

- : Prof. Meena Mahajan (IMSc)
- : Prof. V. Muruganandam (NISER)
- : Prof. K.N. Raghavan (IMSc)
- : Prof. B. Ramakrishnan (HRI) (Convener)

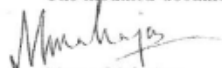
**Special Invitee** Prof. Vijay Kodyalam (Dean, IMSc)

Members Absent :

- : Prof. Punita Batra (HRI)
- : Prof. Mahuya Datta (ISI Kolkata)
- : Prof. R.R. Puri (IIT Gandhinagar)
- : Prof. K.V. Subrahmanyam (CMI)
- : Prof. B. Sury (ISI Bangalore)
- : Prof. Jugal Verma (IIT Bombay)

The proposals submitted by the Dean, IMSc, regarding the syllabus and credit requirements, in line with the *General Guidelines of HBNI*, were discussed. The elaborate discussions and deliberations on this issue by exchange of e-mail correspondences among the members who are present today as well as those who could not be present were taken into account.

After a thorough discussion, the proposals are found acceptable with minor modifications. The modified documents as hereby attached are accepted and approved.

  
Meena Mahajan

  
V. Muruganandam

  
K.N. Raghavan

  
B. Ramakrishnan (Convener)



## Board of Studies, Mathematical Sciences, HBNI

Minutes of the meeting held at HRI  
On 16<sup>th</sup> April, 2017 at 09:00 hrs

### Agenda :

1. Syllabus and credit system for the HRI mathematics course work.
2. Minimum number of publications for the submission of PhD thesis.
3. Any other item with the permission of chair.

### **Members Present :**

1. Prof. P. Batra (HRI)
2. Prof. Mahuya Datta (ISI, Kolkata)
3. Prof. Meena Mahajan (IMSc)
4. Prof. V. Muruganandam (NISER)
5. Prof. K.N. Raghavan (IMSc)
6. Prof. B. Ramakrishnan (HRI) (Convener)
7. Prof. K. V. Subrahmanyam (CMI, Chennai)
8. Prof. B. Sury (ISI, Bangalore)
9. Prof. Jugal Verma (IIT, Bombay)

**Special Invitee :** Prof. D.S. Ramana (HRI)

### **Member Absent :**

1. Prof. R.R. Puri (IIT, Gandhinagar)

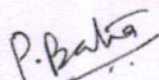
The proposed syllabus and credit requirements of the PhD programme in HRI submitted by the Dean, HRI was discussed. After a detailed discussion the members suggested certain modification of the syllabus.

The revised syllabus after incorporating the suggested modifications is submitted to the Board of studies again. The Board of studies approved the revised syllabus for the PhD programme in HRI, which is hereby attached along with the minutes.

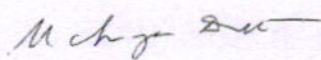
Regarding agenda item 2, about the number of published papers for the submission of PhD thesis, the members of the board had a detailed discussion about updating the requirements, if necessary.

The Board unanimously recommends that the present requirement of one published/accepted journal publication is sufficient for the submission of a PhD thesis.

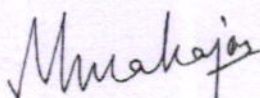
Since there was no other item proposed by the members, the meeting ended with thanks to the chair.



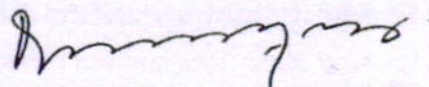
Prof. P. Batra (HRI)



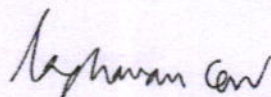
Prof. Mahuya Datta (ISI Kolkata)



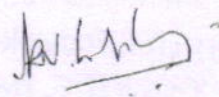
Prof. Meena Mahajan (IMSc)



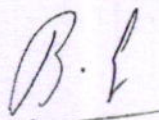
Prof. V. Muruganandam (NISER)



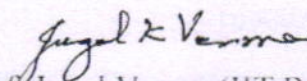
Prof. K.N. Raghavan (IMSc)



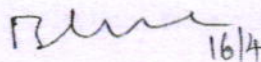
Prof. K. V. Subrahmanyam (CMI)



Prof. B. Sury (ISI)



Prof. Jugal Verma (IIT Bombay)



Prof. B. Ramakrishnan (HRI)  
(Convener)

**Minutes**

Academic Council

July 19, 2017

The composition of doctoral committee has been revised as follows:

The Chairman, Guide, Co-guide (if any), two Faculty Members from the domain of research, one Member from an allied domain and Technology Adviser (if any) as an invitee. The third member from an allied domain can be from any other institute /research institute/university of Central Govt./State Govt./Autonomous/Private. The enrolment forms have been amended along these lines.

Council ratified the new composition of Doctoral Committee. It also suggested that the quorum for different meetings should be as follows:

- a) Annual Review: Chairman, Guide/Co-guide and one out of three members.
- b) OGCE, Pre-synopsis seminar and Final Viva Voce: Chairman, Guide/Co-guide, External Examiner (for Final Viva Voce) and two out of the three members. Among them, one can participate through video. The absentee member (if any) later should give a declaration in the DC report whether he/she agrees with the decision of the committee. In case of unavailability, concerned Dean-Academic of CI or HBNI Associate Dean can attend the meeting to form the quorum.

**M.3.A.3.1.2.:** Integrated Ph.D.: Option form for single/dual degree

Prof. Maity informed that HBNI offers Integrated Ph.D. programmes (single/dual degree) in agreement with the UGC Specification of Degrees, 2014. In the meeting of Standing Committee of Deans, it was decided that all the students joining this programme need to submit an option form declaring his/her choice of single or dual degree. Change of option is not allowed after the allotment of enrolment number.

Council ratified the decision.

**M.3.A.3.2.:** Reports by the Conveners of Boards of Studies, Ratification of names of new Faculty Members, M.Tech. Guides, PG teachers and Approval of new Academic Courses

The Conveners of different BoS presented the reports.

Mathematical Sciences: Prof. B. Ramakrishnan, Convener, BoS informed the Council that review of synopsis and short listing of examiners of seventeen doctoral students were carried during the present period. The BoS also approved the modified syllabi of Ph.D. courses with credits for IMSc and HRI students.

**MINUTES OF THE Board of Studies meeting on  
Mathematical sciences, HELD  
IN NISER, Bhubaneswar**

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Date: April 7, 2018 AT 9.00 a.m.

**Members Present**

1. Prof. B. Ramakrishnan, (Chairperson)
2. Prof. J.K. Verma, I.I.T Bombay
3. Prof. K.N. Raghavan, I.M.Sc
4. Prof. Meena Mahajan, I.M.Sc.
5. Prof. Mahuya Datta, I.S.I. Kolkatta
6. Prof. D. Surya Ramana, HRI, Allahabad.
7. Prof. Varadharajan Muruganandam, NISER
8. Dr. Sanjay Parui (Invitee)
9. Dr. Subhankar Mishra (Invitee)

**Members who could not attend:**

1. Prof. B. Sury.
2. Prof. K.V. Subrahmanyam.
3. Prof. R.R. Puri.

**Agenda**

1. To deliberate and approve the course work along with credit-distribution for Ph.D in Mathematical Sciences at NISER.
2. To deliberate and approve the course work along with credit-distribution for Ph.D in Computer Science, at NISER.

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एच.बी.एन.आई / H.B.N.I.
आवक सं / Inward No.: 1005
दिनांक / Date: 16/4/18
हस्ताक्षर / Initial:

**Item 1:** Assignment of credits for Ph.D courses.

Decision Taken: it is decided to assign 8 credits for the core and elective courses, wher as, the course Research Methodology is given 4 credits.

**Item 2. Discussion on Courses in Mathematics II.**

(a) The committee deferred the discussion on Courses in Mathematics II stream, as there is no expert in statistics/probability in the Board.

(b) The committee further recommends that at least two experts in the field of Statistics may be invited to the next BoS meeting proposed exclusively to approve the syllabus for this stream.

The following list of the experts is suggested by the committee.

1. Prof. Rajeev Karandikar, CMI.
2. Prof. Abhay Bhatt, I.S.I. Delhi
3. Prof. Rahul Roy, I.S.I Delhi
4. Prof. Probal Chaudhuri, I.S.I. Kolkata,
5. Prof. Arup Bose, I.S.I. Kolkata.

**Item 3: The distribution of the courses Stream I.**

- Semester I. Total Credits = 28
  1. Algebra I (8)
  2. Analysis I (8)
  3. Topology I (8)
  4. Research Methodology (4)
- Semester II. Total Credits = 32
  1. Algebra II (8)
  2. Analysis II (8)
  3. Topology II (8)
  4. Complex Analysis (8)
  5. Elective (8)
- The student is expected to take at least 2 out of the first 3 core courses enumerated above for semester II.



- A course on *Differential Geometry* should be included in the list of elective courses. Similarly, some courses entitled "Topics in ...." can be introduced as electives.

**Item 4: Approval of the syllabus** The syllabus for Core and elective courses are hereby approved subject to the following conditions.

1. The course M659 Topology and Complex analysis has to be bifurcated into two separate courses viz, Topology I and Complex Analysis.
2. M632 Advanced Probability should be made elective and should be named Probability.

**Item 5:** Some corrections that are found in the preamble of the Course Curriculum submitted by SMS, NISER, were indicated to the Chairperson, SMS for the corrections.

**Item 6:** The chairpersons of respective schools are requested to re-submit the curriculum after effecting the modifications suggested.

**item 7:** Changes suggested in the Course Curriculum for PhD in Computer Science.

- Re-assign the course credits. CS/Math courses will be 8 credits each. Research methodology course will be 4 credits.

List 1: Core Courses

- Restructure the course lists. List 2: Research Methodology

List 3: Elective Courses

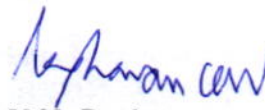
- Requirements: Each student will do three courses from List 1, and the course on Research Methodology, in semester 1. In the second semester, the student will do 4 courses from lists 1 and 3, including the seminar course.
- Courses numbering need to be rationalised.
- Minor changes in syllabus specification.

**Item 8** The BoS authorises the Convener to submit the final syllabus to HBNI, after scrutinising the changes mentioned above, through email exchange.

**Item 9: Any other item:**

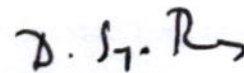
The committee is of the view that it is not under the purview of the Board to discuss the query raised by the Chairperson, SMS, NISER on the feasibility of having a separate Ph.D program in Statistics with the curriculum given in Mathematics II.

  
J.K. Verma,


  
K.N. Raghavan

  
Meena Mahajan

  
Mahuya Datta,

  
D. Surya Ramana

  
V Muruganandam

  
B. Ramakrishnan, (Chairperson)