

Central University of Himachal Pradesh

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Department of Mathematics

Minutes of the First meeting of Board of Studies (BOS) held on 19th September, 2012 at 11.00 A.M.

The First meeting of BOS of the Department of Mathematics was held on 19th of September, 2012 at Temporary Academic Block (TAB), Shahpur at 11.00 A.M.

The following were present:

1. Prof. I.V. Malhan, Chairman & Convenor
2. Prof. Bal Kishan Dass, Subject Expert, University of Delhi
3. Prof. Yoginder Singh Verma, Dean, School of Management, CUHP
4. Prof. H. R. Sharma, Head, Department of Economics and DSW

The decisions taken on various items of Agenda and record of discussions held are as under:

Item-BOS-1.1: Approval of rules of business of Board of Studies of the Department of Mathematics.

Decision: The rules for the conduct of the business of BOS of the Department of Mathematics were approved as given in **annexure-1**.

Item-BOS-1.2: Approval of Courses of M.Sc., M.Phil and Ph.D. Programs of the Department of Mathematics.

Decision: The course catalogue prepared by the Curriculum Development Committee (CDC) and newly proposed courses given in **Annexure-2** were thoroughly discussed and reviewed in the interest of student's learning requirements and delivery of quality education. The following decisions were taken in this regard:

- In addition to the existing courses, the BOS members approved some newly proposed courses with some modifications in titles as per standardized practices. Some new courses were also suggested and approved by the BOS keeping in view the need for modernization of course curricula. (**Annexure-3**)
- It was unanimously resolved that instead of community lab; students of mathematics should be encouraged to take some other courses.
- Instead of M.Sc. Project of 4 Credits & M.Sc. Dissertation of 12 Credits, students be offered **IAM 550 Project & Seminar based Practical Training with Industry**, comprising of 4 Credits because the M.Sc. degree of Mathematics has a slant and specialization of Industrial Mathematics.
- The Committee identified and listed some courses (**Annexure-4**) which are relevant and useful for Industrial Mathematics and further recommended that out of the 56 credits taken by the students from the Department, at least 16 credits must be taken by the students from these courses to justify Industrial Mathematics as the specialization of M.Sc. Mathematics Degree program.

Item-BOS-1.3: Approval for Educational Tour of students to visit various institutions of importance.

Decision: The Educational Tour of students to visit various institutions of importance to facilitate on-site learning was unanimously approved.

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Item-BOS-1.4: Approval of panel of external examiners to be appointed for conducting viva-voce and practical examination.

Decision: The BOS unanimously approved the list of external examiners which is given at Annexure-5.

Item-BOS-1.5: Approval of panel of eminent subject experts to deliver invited lectures and teach courses in the workshop mode.

Decision: Members were of the view that the select list (Annexure-6) of experts to be invited for delivery of education in the workshop mode may restrict the university to rely on these experts only and sometimes experts are not available at the desired time. This item was therefore withdrawn so that university may be able to invite any available eminent faculty member to enrich the knowledge of students and impart them the desired skills & competencies.

Item-BOS-1.6: Any other item with the permission of the chair.

Decision: None of the member proposed any item for discussion and hence no item was taken up.

The meeting terminated with a vote of thanks to all the members of BOS.

(Prof. I. V. Malhan)
Chairman & Convenor
BOS, Department of Mathematics
CUHP

Copy to:

1. All the members of BOS, Department of Mathematics for approval.
2. The Coordinator TAB, CUHP for Information and Record.
3. The Finance Officer, CUHP, Camp Office Dharamshala for Information and Record.
4. P.S. to Vice-Chancellor for Information of Hon'ble Vice-Chancellor

Regulations for the conduct of the Business of Board of Studies (BOS)

Regulation No. 4

REGULATIONS FOR THE CONDUCT OF THE BUSINESS OF THE BOARD OF STUDIES

(Made under the Provisions of Section 29 of the Act and Statue 38 of 1st Statues)

1. These regulations may be called, "Regulations for the conduct of the business of the Board of Studies" and shall come into force from the date of notification.
2. The Head of the Department/Centre shall convene and preside over the meeting of Board of Studies.
3. In case Head of Department/Centre is not present at any meeting, the senior-most member present shall act as the Chairman for the meeting in accordance with the clause 6 of University Ordinance 4.
4. The date, time and place for holding the meeting of the BOS shall be as fixed by the Chairman.
5. A regular meeting of the BOS shall be held at least two times, in a year as per the requirements of University Ordinance 4.
6. Notice for a meeting of BOS, other than a special meeting, shall ordinary be issued at least 10 days before the day fixed for the meeting.
7. The quorum for the meetings of the BOS shall be 50% of the members of the BOS which shall include at least one outside expert.
8. Special meeting may be called by the chairman at his/her own initiative or on a written request by at least 50% of the members of BOS.
9. In case of special meeting called at the request of the members, no item other than those notified in the Agenda shall be discussed and that the presence of all members, at whose request the special meeting was called, will be essential.

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10. If in the opinion of the Vice-Chancellor, it is not necessary or expedient to convene a meeting of the Board of Studies to consider any item and if he considers that a matter could be disposed of by circulation among the members of Board of Studies, he may issue necessary instructions to that effect.
11. An item proposed by any member(s) and included in the agenda may be withdrawn by the member(S) with the permission of the chairman.
12. The conduct of business and order of speaking shall be controlled by the Chairman.
13. The Chairman at his own instance or at the instance of any member may call or order any member to participate in the discussion.
14. Ordinarily no business other than that is brought forward in the agenda or supplementary agenda shall be transacted in the meeting. The Chairman may, however, introduce or permit to introduce any other item for discussion provided that such an item could satisfactorily be dealt with in the meeting without any prior notice.
15. All decisions in the meetings of BOS shall be taken by consensus. However, if circumstances so warrant, the Chairman may resort to voting for taking a decision by majority of the votes of the members present. It shall be for the Chairman to decide the manner in which the votes are to be cast. The Chairman shall have a vote and a casting vote.
16. A matter once decided by the BOS shall not be reopened within next six months except with the consent of the Chairman.
17. The Head of the Department/Centre, within seven days after the meeting of the BOS, shall send a copy of the minutes to each member of the BOS.
18. The decisions recorded in the proceedings shall be submitted to the Dean of the School concerned for inclusion in the agenda of the School Board for its next meeting.
19. Formal confirmation of the minutes will be the first item on the agenda of the following meeting of the BOS.

School of Mathematics, Computers and Information Science

Department of Mathematics

Course Code	Name of Course	Credits	Level at which to be offered	Prerequisite	Co-requisite
MTH 101	Algebra	4	1	Mathematics of 12 th Std	
MTH 102	Calculus	4	1	Mathematics of 12 th Std	
MTH 103	Analytical Geometry	4	1	Mathematics of 12 th Std	
MTH 104	3D Geometry	2	1	Mathematics of 12 th Std	
MTH 201	Vector Calculus	4	2	MTH 102	
MTH 202	Multiple & Elliptical Integrals	4	2	MTH 102	
MTH 301	Principles of Computer Programming	2	3	Mathematics of 12 th Std	
MTH 302	Elementary Numerical Methods	4	3	MTH 101; MTH 102	
MTH 303	Computer Lab	2	3	MTH 102	MTH 301
MTH 401	Ordinary Differential Equations	4	4	MTH 102	
MTH 402	Partial Differential Equations	4	4	MTH 102	
MTH 403	Linear Algebra	4	4	MTH 101	
MTH 404	Abstract Algebra	4	4	MTH 101	
MTH 405	Lebesgue Measure and Integration	4	4	MTH 102	
MTH 406	Real Analysis	4	4	MTH 102	
MTH 407	Numerical Methods	4	4	MTH 401; MTH 402	
MTH 408	Partial Differential Equations & Integral Equations	4	4	MTH 402	
MTH 409	Complex Variables	4	4	MTH 102	
MTH 410	Fundamentals of Statistics	2	4		

MTH 501	Topology	4	5	MTH 406	
MTH 502	Operational Research	4	5		
MTH 503	Discrete Mathematics	4	5		
MTH 504	Mechanics	4	5	MTH 102	
MTH 505	Fuzzy Sets and Fuzzy Systems	4	5		
MTH 506	Software Lab	4	5		
MTH 507	Approximation Theory	4	5		
MTH 508	Graph Theory	4	5		
MTH 509	Financial Mathematics	4	5		
MTH 510	Number Theory	4	5		
MTH 511	Numerical Mathematical Analysis	4	5		
MTH 549	Community Lab	4	5		
MTH 550	M.Sc. Project	4	5		
MTH 590	M.Sc. Dissertation	12	5		
MTH 599	Dissertation	20	5		
MTH 601	Hydrodynamic Stability Theory	4	6	MTH 401; MTH 402	
MTH 602	Advanced Differential Equations	4	6	MTH 401; MTH 402	
MTH 603	Advanced Numerical Methods	4	6	MTH 407	
MTH 604	Entire Functions	4	6	MTH 409	
MTH 605	Multivariate Analysis	4	6		
MTH 606	Principle of Mathematics and Techniques	4	6		
MTH 607	Coding Theory & Applications	4	6		
MTH 608	Advanced Complex Analysis	4	6	MTH 409	
MTH 609	Advanced Algebra	4	6		
MTH 610	Advanced Algebraic Number Theory	4	6		
MTH 611	Advanced Topics in Topology and Analysis	4	6		

MTH 612	Advanced Topics in Discrete Mathematics	4	6		
MTH 699	Thesis	60	6		
IAM 401	Complex Analysis	4	4		
IAM 402	Ordinary and Partial Differential Equations	4	4		
IAM 403	Numerical Analysis	4	4		
IAM 404	Mathematical Methods	4	4		
IAM 405	Fluid Dynamics	4	4		
IAM 406	Theory of Elasticity	4	4		
IAM 407	Differential Geometry	4	4		
IAM 501	Functional Analysis	4	5		
IAM 502	Applied Numerical Analysis	4	5		
IAM 503	Mathematical Analysis	4	5		
IAM 504	Computer Applications	4	5		
IAM 505	Mathematical Modelling and Simulations	4	5		
IAM 506	Finite Element Methods	4	5		
IAM 507	Wavelet Theory	4	5		
IAM 508	Image Processing	4	5		
IAM 509	Robotics and Control	4	5		
IAM 510	Artificial Intelligence	4	5		
IAM 511	Computer Aided Design	4	5		
IAM 512	Queues and Reliability	4	5		
IAM 513	Computer Graphics	4	5		
IAM 514	Data Base Management	4	5		
IAM 515	Bio Mathematics	4	5		
IAM 516	Spectral Methods	4	5		
IAM 517	Mesh Free Methods	4	5		
IAM 518	Optimization Techniques	4	5		

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IAM 519	Data Structure Techniques	4	5		
IAM 520	Theory of Vibrations	4	5		
IAM 521	Advanced Fluid Dynamics	4	5		
IAM 522	Astronomy and Space Dynamics	4	5		
IAM 523	Special Functions	4	5		
IAM 524	Mathematical Packages	4	5		
IAM 549	Community Lab	4	5		
IAM 550	Project and Seminar based on Practical Training with Industry	4	5		
IAM 590	M.Sc. Dissertation	12	5		
IAM 598	Project	4	5		
IAM 599	Dissertation	20	5		
IAM 601	Boundary Value Problems & Asymptotic Analysis	4	6		
IAM 602	Computational Methods	4	6		
IAM 603	Applied Functional Analysis	4	6		
IAM 604	Advanced Mathematical Methods	4	6		
IAM 699	Thesis	60	6		

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Annexure-3

List of New Courses Approved by the BOS.

Course Code	Name of the Course	Credits	Level at which to be offered	Prerequisite	Co-requisite
MTH 304	Introduction to Real Analysis	4	3		
MTH 407 A	Numerical Methods and C++ Programming	4	4		
MTH 409 A	Complex Analysis	4	4		
MTH 506 A	Mathematica/Metlab/Any other	4	5		
MTH 602 A	Numerical Solutions of Differential Equations	4	6		
MTH 609	Advanced Algebra	4	6		
MTH 610	Algebraic Number Theory	4	6		
MTH 611	Advanced Topology and Analysis	4	6		
MTH 612	Advanced Discrete Mathematics	4	6		
IAM 525	Financial Mathematics	2	5		
IAM 605	Principles of Mathematical Techniques	2	6		

Annexure-4

Courses Approved by BOS for selecting 16 credits for Industrial Mathematics

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Course Code	Name of the Course	Credits	Level at which to be offered	Prerequisite	Co-requisite
MTH 407	Numerical Methods	4	4		
MTH 502	Operational Research	4	5		
IAM 403	Numerical Analysis	4	4		
IAM 404	Mathematical Methods	4	4		
IAM 408	Mathematical Modelling	4	4		
IAM 409	Applied Algebra	4	4		
IAM 501	Functional Analysis	4	5		
IAM 502	Applied Numerical Analysis	4	5		
IAM 507	Wavelet Theory	4	5		
IAM 508	Image Processing	4	5		
IAM 509	Robotics and Control	4	5		
IAM 510	Artificial Intelligence	4	5		
IAM 511	Computer Aided Design	4	5		
IAM 514	Data Base Management	4	5		
IAM 518	Optimization Techniques	4	5		
IAM 519	Data Structure Techniques	4	5		
IAM 550	Project and Seminar based on Practical Training with Industry	4	5		

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Annexure-5

List of Experts for Conducting Practical Exams and Viva-Voce

Sr. No.	Name & Details	Contact No.	University
1.	Dr. B.S. Komal, Ex-Professor Email: bskomal@jammuuniversity.in (Profile)	0191-2452888(O) 0191-2434974(R)	University of Jammu
2.	Dr. Amit Chakraborty, Assistant Professor, E-mail id: amitc.maths@curaj.ac.in		Central University of Rajasthan
3.	Dr. D.C. Sharma, Associate Professor, Email id : dcsharma@curaj.ac.in		Central University of Rajasthan
4.	Dr. Sarita Azad Assistant Professor Specialization: Statistical Time Series Analysis Ph.D in Applied Mathematics (2008)	01905-237907	IIT Mandi
5.	Dr. Syed Abbas, Assistant Professor, abbas@iitmandi.ac.in	01905-237933	IIT Mandi
6.	Dr Damanjit Kaur, Asstt. Professor, kaurd@nitj.ac.in		NIT Jalandhar
7.	Dr. Suket Kumar, Asstt. Professor, suket@nith.ac.in		NIT Hamirpur
8.	Dr. Sunil, Associate Professor, sunil@nith.ac.in	254134(O) 254135(R)	NIT Hamirpur
9.	DINESH K. KHURANA, Assistant Professor, dkhurana@pu.ac.in	+91 2534519	PU Chandigarh
10.	SATYA BIR SINGH, Reader & Head, sbsingh69@yahoo.com, sbsingh69@rediffmail.com	9872211695	Punjabi University Patiala

School of Mathematics, Computers & InformaticsDepartment of MathematicsCourse in the Workshop Mode

Wherever specialized expertise is required and such expertise can enrich the Knowledge of students and impart them the desired skills and competencies, the department may arrange to teach some modules of courses registered by the students in the workshop mode. The list of experts who may be invited in delivery of education in the workshop is given below:

Sr. No.	Name & Details	Contact No.	University
1.	Prof. Bal Kishan Dass (Profile) Email: dassbk@rediffmail.com http://www.du.ac.in/index.php?id=270&fmember=2596&cid=348#top	011-27666658, 98111-91046	Delhi University
2.	Dr. R. G. Shandil, Professor (Profile)	0177-2830697, 64184-61439	HPU-Shimla
3.	Dr. M. G. Gorla, Professor (Profile)	0177-2831468, 94181-52522	HPU-Shimla
4.	Prof. Ram P. Sharma Prof. & Chairman Department of Mathematics & Statistics Email: rp_math_hpu@yahoo.com rp_math_hpu@yahoo.com (Profile)		HPU-Shimla
5.	Prof. S K TOMAR, Chairperson, Dept. of Mathematics e-mail: casmath@pu.ac.in (Profile)	0172-2534501	PU-CHD
6.	Dr. D. S. Jamwal, Prof. & Head, Email: dsjamwal@jammuuniversity.in (Profile)	0191-2452888	University of Jammu

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7.	Dr. B.S. Komal – Ex Professor Email: bskomal@jammuuniversity.in (Profile)	0191-2452888(O) 0191-2434974(R)	University of Jammu
8.	Dr. A.P. Singh, Professor & Head, Email_id : apsingh@curaj.ac.in (Profile)	0191-2452888(O) 0191-2457004(R)	Central University of Rajasthan
9.	Prof. Mohd. Hasan Shahid Prof. & Head, Email: mshahid@jmi.ac.in Email: Hasan_jmi@yahoo.com (primary) (Profile)	011-26981717, 98994-54626	JMI-Delhi
10.	Dr. Abdul Wafi-Professor Email: awafi@jmi.ac.in Email: abdulwafi2002@yahoo.co.in (Primary) (Profile)	011-26989967, 98105-21220	JMI-Delhi
11.	Prof. Khalil Ahmad-Professor Email: kahmad1@jmi.ac.in Email: khalil_ahmad49@yahoo.com (Primary) (Profile)	011-26981717 011-26989880	JMI-Delhi
12.	Dr. M. Amin Sofi-Professor, (Brief Profile) (Detailed Profile) Email: aminsofi@rediffmail.com	99066-81952	University of Kashmir
13.	Dr. N. A. Rather-Professor & Head (Profile) Email: drnarather@gmail.com	94199-33382	University of Kashmir
14.	Dr. R.K. Nagaich-Professor (Profile) Email: nagaich_rk@yahoo.com http://punjabiversity.ac.in/pbiuniweb/pages/departments/biodata/Math/rknagaich.htm	94178-74900	Punjabi University, Patiala
15.	Dr. T.D. Narang-Professor (Profile) Email: Tdnarang1948@yahoo.co.in	98157-10509	GNDU, Amritsar
16.	Prof. Pammy Manchanda-Professor (Profile) Email: Pmanch2k1@yahoo.co.in	0183-2258802	GNDU, Amritsar
17.	Prof. Huzoorul Hasnain Khan (Profile) Email: huzoorkhan@yahoo.com	94576-59143	AMU, Aligarh
18.	Prof. Afzal Beg (Profile) Email: begafzal@yahoo.com	94125-97251	AMU, Aligarh

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19.	K.N.RAI-Professor & Ex-Head (Profile) Email: knrai.apm@itbhu.ac.in http://itbhu.ac.in/apm/kn%20rai.htm	99353-46251	BHU, Banaras
20.	Prof. Shri Ram-HOD (Profile) Email: head.apm@itbhu.ac.in srmathitbhu@rediffmail.com http://itbhu.ac.in/apm/ShriRam.htm	94540-58131	BHU, Banaras
21.	Prof. B. Chandra (Profile) Email: bchandra@maths.iitd.ac.in http://maths.iitd.ac.in/people/faculty/bchandra.php		IIT Delhi
22.	Prof. Dharendra Bahuguna Email: dhiren@iitk.ac.in http://home.iitk.ac.in/~dhiren/	91-512-2597053	IIT Kanpur
23.	Prof. , R.C Mittal. HOD. (Profile) Email: rcmmmfma@iitr.ernet.in http://www.iitr.ac.in/~MA/rcmmmfma	93199-12030	IIT Roorkee
24.	Prof. Alam, Syed Samsul (Profile) Email: alam@iitkgp.ac.in http://www.iitkgp.ac.in/departments/showprofile.php?emrcode=YXmdV&deptcode=MM	+91-3222-283636	IIT Kharagpur