



head Applied Mathematics <head.cam@cuja.ac.in>

Minutes of 5th Meeting of Board of Studies of Department of Mathematics.

7 messages

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Tue, Sep 21, 2021 at 6:26 PM

To: Sukumar Das Adhikari <adhikarisukumar@gmail.com>, dn_garain@rediffmail.com, dkg@maths.iitkgp.ernet.in, Arun Padhy <arun.padhy@cuja.ac.in>, Manoj Kumar <msinhabit@gmail.com>, "Dr. Vineet Kr. Agotiya" <agotiya81@gmail.com>, Hrishikesh Mahato <hrishikesh.mahato@gmail.com>, mahendra.singh@cuja.ac.in, scy123@gmail.com, "P. K. Parida" <pkparida@cuja.ac.in>, Manoj Kumar <manoj.kumar@cuja.ac.in>

To,
The committee members
Board of Studies of the Department of Mathematics
CUJ, Ranchi

Dear Sir,

Please find attached herewith the minutes of the 5th meeting of Board of Studies of Department of Mathematics (DoM) held on 15th September 2021 (3:30 p.m. onwards) in online mode and revised syllabus of M.Sc (2Y) & Ph.D. The minutes are prepared as per resolutions taken in the meeting.

Your valuable consent on the draft of the minutes through E-mail would be highly appreciated.

Thanking you and with best regards

Dr. Jitendra Kumar
Coordinator & Assistant Professor
Department of Mathematics,
Central University of Jharkhand
Brambe, Ranchi.
835205

3 attachments

05th BOS minutes of the meeting.pdf
37K

Annexure-III-Revised Syllabus of Ph.D 2021-BOS.pdf
82K

Annexure-II-Revised Syllabus of MSc_2Y_ 2021-BOS.pdf
78K

Tue, Sep 21, 2021 at 6:45 PM

Arun Padhy <arun.padhy@cuja.ac.in>

To: head Applied Mathematics <head.cam@cuja.ac.in>

As per the discussion with reference to point 11, it has been decided not to impose. As one of the expert member told that in pure mathematics it is impossible to publish within two years as first year is course work. This is my observation and the minute has to be changed in line with it.

[Quoted text hidden]

head Applied Mathematics <head.cam@cuja.ac.in>

Wed, Sep 22, 2021 at 8:25 AM

ae
Parida




Respected Sir,
Please find attached herewith the minutes of 5th Board of Studies of Department of mathematics (DoM) held on 15th September 2021 (3 :30 PM onwards) and revised syllabus of M.Sc(2Y) & Ph.D programs. The Minutes are prepared as per resolution taken in the meeting.

Your valuable consent on the draft of the minutes through E-mail would be highly appreciated

Thanking You and With Regards

[Quoted text hidden]

3 attachments

-  **05th BOS minutes of the meeting.pdf**
37K
-  **Annexure-III-Revised Syllabus of Ph.D 2021-BOS.pdf**
82K
-  **Annexure-II-Revised Syllabus of MSc_2Y_ 2021-BOS.pdf**
78K

DHARMENDRA KUMAR GUPTA <dkgupta15153@gmail.com>
To: head Applied Mathematics <head.cam@cuja.ac.in>

Wed, Sep 22, 2021 at 8:31 AM

Dear Sir,

I give my consent for the revised syllabus.

With regards,

Sincerely yours,

D.K.Gupta

[Quoted text hidden]

DHARMENDRA KUMAR GUPTA <dkgupta15153@gmail.com>
To: head Applied Mathematics <head.cam@cuja.ac.in>

Wed, Sep 22, 2021 at 8:41 AM

Dear Sir,

I have gone through the minutes of the revised contents send by you of the 5th Meeting of Bord of Studies of Department of Mathematics.
I give my consent for the same.

Regards,

Sincerely yours,
D.K.Gupta

On Wed, 22 Sep 2021, 08:25 head Applied Mathematics, <head.cam@cuja.ac.in> wrote:
[Quoted text hidden]

D. N. Garain <dn_garain@rediffmail.com>
To: head Applied Mathematics <head.cam@cuja.ac.in>

Wed, Sep 22, 2021 at 11:55 AM

To,
The Head
Department of Applied Mathematics,
Central University of Jharkhand, Ranchi
Sir,

I have gone through the minutes of 5th meeting of the Board of Studies which has been sent by you through the mail.
I found that the minutes sent by you are the same as the decision taken in the meeting.
So, I agree with it.

Regards,
D.N. Garain

Planned
M. Q

S.K.M University
Dumka, Jharkhand -814101
India

From: head Applied Mathematics <head.cam@cuja.ac.in>

Sent: Tue, 21 Sep 2021 18:27:21

To: Sukumar Das Adhikari <adhikarisukumar@gmail.com>, dn_garain@rediffmail.com, dkg@maths.iitkgp.ernet.in,

Arun Padhy <arun.padhy@cuja.ac.in>, Manoj Kumar <msinhabit@gmail.com>, "Dr. Vineet Kr. Agotiya"

<agotiya81@gmail.com>, Hrishikesh Mahato <hrishikesh.mahato@gmail.com>, mahendra.singh@cuja.ac.in,

scy123@gmail.com, "P. K. Parida" <pkparida@cuja.ac.in>, Manoj Kumar <manoj.kumar@cuja.ac.in>

Subject: Minutes of 5th Meeting of Board of Studies of Department of Mathematics.

To,

[Quoted text hidden]

Sukumar Das Adhikari <adhikarisukumar@gmail.com>

To: head Applied Mathematics <head.cam@cuja.ac.in>


Wed, Sep 22, 2021 at 1:28 PM

This is to consent on the draft of the minutes.




Best regards,

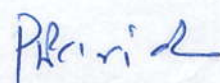
Sukumar Das Adhikari
Dean, School of Mathematical Sciences
Ramakrishna Mission Vivekananda Educational and Research Institute
Belur Math, Howrah - 711202, WB, INDIA

[Quoted text hidden]

 22/09/21

 Mahato 22/9/2021











Date: 15th September, 2021

1. Prof. A.K. .Padhy, Prof. DoC, Dean (SNS)	-Chairman
2. Prof. S.D. Adhikari, Prof. and Head, DoM, Ramakrishna Mission Vivekananda Educational and Research Institute (RKMVERI)	- External Member
3. Prof. D.K. Gupta, (Retd. Prof. DoM, IIT Kharagpur), Prof., IIIT Ranchi	- External Member
4. Prof. D.N. Garain, Prof. and Head, DoM, S.K.M. University Dumka-	External Member
5. Prof. Manoj Kumar, Prof. and Head, DEVS	- Member
6. Prof. Subhash Chandra Yadav, Prof. and Head, DCST	- Member
7. Dr. V.K. Agotiya, Assistant Prof., DoP	- Member
8. Dr. Mahendra Singh, Assistant Prof., DBA	- Member
9. Dr. HrishikeshMahato,Assistant Prof., DoM	- Member
10. Dr. Jitendra Kumar,Assistant Prof., DoM	- Member
11. Dr. P. K. Parida, Assistant Prof., DoM	- Invited member

Prof. A.K.Padhy, Chairpersons of the committee warmly welcomes and introduced all the respected members of the Board of Studies. Thereafter, following agendas were discussed and their resolutions were taken into consideration.

Sl.No.	Agenda Items and Resolutions	Pages
01.	<p>Confirmation of the minutes of the 4th Board of studies meeting held on 13.11.2020.Annexure-I</p> <p>Resolution: Action taken reports of the 04th Board of Studies meeting presented. The minutes of 4th BoS has been confirmed.</p>	
02.	<p>Revision of the syllabus of M.Sc. (02yrs) and Ph.D. programs.</p> <p>Resolution: The matter has been discussed and approved the proposed revision of the syllabus.</p> <p>Suggestion of the expert members were taken into consideration and accordingly syllabus has been prepared. (Annexure-II, III)</p>	







03.	<p>Preparation of Integrated M.Sc. Syllabus in line with NEP and commencement of Integrated M.Sc in Mathematics from next academic session.</p> <p>Resolution: The matter has been discussed and approved the proposed revision of the syllabus.</p> <p>The department has been proposed to initiate Integrated M.Sc in Mathematics from next year. Board members advised to frame detailed syllabi and course structure of the program as per the New Education policy and same maybe send to external members for their valuable suggestion for its finalization. Dean, School of Natural Sciences advised to framing the course structure and syllabi as per recent circulars from MHRD/ UGC on NEP.</p>																														
04.	<p>Information for award of Ph.D. degrees and submission of dissertations for Ph.D. degrees</p> <p>Resolution: Committee noted that the following students awarded Ph.D. degree in the Dept.</p> <p>1. Mr. Helal Ahmed under the supervision of Dr. Jagmohan Tanti</p> <p>2. Mr. Amit Kumar Prasad has successfully defended his thesis under the supervision of Dr. Jitendra Kumar.</p>																														
05.	<p>Extension of Research Lab for Ph.D students and establishment of PG computer Lab</p> <p>Justification: Department may have atmost 36 Ph.D students.</p> <p>Resolution: committee recommends for the extension of Research Lab for Ph.D students with atleast 20 numbers of Desktops with UPS and required licensed institutional version softwares. The Committee also recommends to establish a computer Lab for PG students separately with atleast 50 Desktops with UPS and required licensed institutional version softwares.</p>																														
06.	<p>Number of students admitted in various courses of study in the Academic year 2020</p> <p>Members were informed that the number of students for two years M.Sc. program admitted in 2020 was discussed in a meeting attended by all the Head and Deans and as per resolution of the meeting, the intake of the same has been increased from 28 students to 44 students.</p> <p><u>Ph.D. students Admitted in 2020</u></p> <table><tr><th>Sl. no</th><th>State</th><th>Total</th><th>Male</th><th>Female</th><th>Gen</th><th>OBC</th><th>SC</th><th>ST</th><th>PH</th></tr><tr><td>01.</td><td>Jharkhand</td><td>02</td><td>00</td><td>02</td><td>00</td><td>01</td><td>01</td><td>00</td><td>00</td></tr><tr><td>02.</td><td>Odisha</td><td>01</td><td>00</td><td>01</td><td>01</td><td>00</td><td>00</td><td>00</td><td>00</td></tr></table> <p><u>M.Sc. students Admitted in 2020</u></p>	Sl. no	State	Total	Male	Female	Gen	OBC	SC	ST	PH	01.	Jharkhand	02	00	02	00	01	01	00	00	02.	Odisha	01	00	01	01	00	00	00	00
Sl. no	State	Total	Male	Female	Gen	OBC	SC	ST	PH																						
01.	Jharkhand	02	00	02	00	01	01	00	00																						
02.	Odisha	01	00	01	01	00	00	00	00																						

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22/09/2021

[Signature] *[Signature]*
P. Anand

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 P. S. Jadhav

(87)


12.	Minimum criteria for extension of university fellowship Resolution: The committee discusses on the matter and resolve that the publication of at least one research paper in UGC care listed journal is expected before processing for the extension of the university research fellowship. However decision of RAC regarding extension of the university fellowship may be the final recommendation.	
13.	Proposal of the Mathematics Syllabus for the students (Semester I & II) of B.Sc. (Honours/Major in Chemistry) Course. Resolution: Members perused the course proposed by Department of Chemistry for the students (Semester I & II) of B.Sc. (Honours/Major in Chemistry) Course and approved it.	
14.	Any others matters	

Finally the meeting concluded with a vote of thanks to all members proposed by Dr. Jitendra Kumar, Coordinator, Assistant Professor, DoM.

Prof. S.D. Adhikari

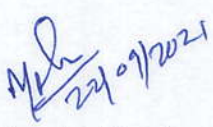
Prof. D.K. Gupta

Prof. D.N. Garain



Prof. Manoj Kumar

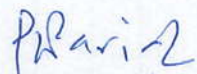

Prof. Subhash Chandra Yadav


Dr. V.K. Agotiya


Dr. Mahendra Singh


Dr. Hrishikesh Mahato


Dr. Jitendra Kumar


Dr. P.K. Parida


Prof. A.K. Padhy

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CENTRAL UNIVERSITY OF JHARKHAND
DEPARTMENT OF MATHEMATICS

2021 ONWARDS

Programme structure for Two years M.Sc. degree programme in Mathematics
L – Lecture, T- Tutorial, P – Practical (Lab), Cr – Credits.

FIRST SEMESTER

Sl. No.	Course Code	Course Title				CR
			L	T	P	
1	MMA 111020	Differential Equations	3	1	0	4
2	MMA 111031	Mathematical Analysis (syllabus revised)	3	1	0	4
3	MMA 111050	Fundamentals of Computers and C Programming	2	0	2	4
4	MMA 111060	Numerical Analysis (Shifted from second semester)	3	1	0	4
5	MMA111070	Linear Algebra(Shifted from second semester)				
Total Credits						20

SECOND SEMESTER

Sl. No.	Course Code	Course Title				CR
			L	T	P	
1	MMA 121050	Statistics – I	3	1	0	4
2	MMA 121060	Complex Analysis (Shifted from first semester)	3	1	0	4
3	MMA121070	Measure Theory and Integration(newly introduced)	3	1	0	4
4	MMA 121080	Topology(syllabus revised and renamed from Metric space and Topology)	3	1	0	4
5	MMA121090	Abstract Algebra(Shifted from first semester)	3	1	0	4
			3	1	0	4
Total Credits						20

THIRD SEMESTER

Sl. No.	Course Code	Course Title				CR
			L	T	P	
1	MMA 211010	Functional Analysis	3	1	0	4
2	MMA 211030	Calculus of Variations and Integral Equations	3	1	0	4
3	MMA 211040	Partial Differential Equations (shifted from 4 th Semester)				
4		Elective – I	3	1	0	4

5		Elective – II	3	1	0	4
6	MMA 213060	Seminar				2
Total Credits						22

FOURTH SEMESTER						
Sl. No.	Course Code	Course Title				CR
			L	T	P	
1	MMA 221040	Optimization Techniques(reshuffled from elective to compulsory)	3	0	1	4
2	MMA 221050	Number Theory (shifted from 2 nd semester)	3	1	0	4
3		Elective – III	3	1	0	4
4	MMA 223030	Project				8
Total Credits						20

List of Electives for 3rd Semester						
Sl. No.	Course Code	Course Title				CR
			L	T	P	
1	MMA 215040	Theory of Computations	3	1	0	4
2	MMA 215060	Field Theory	3	1	0	4
3	MMA 215070	Statistics-II	3	1	0	4
4	MMA 215080	Discrete Mathematics	3	1	0	4
5	MMA 215090	Fluid Dynamics	3	1	0	4
6	MMA 215100	Theory and Applications of Fuzzy sets	3	1	0	4
7	MMA 215110	Data Structures and Algorithm Analysis	3	0	1	4
8	MMA 215120	Cryptography	3	1	0	4
9	MMA 215130	Java Programming	3	0	1	4
10	MMA 215140	Graph Theory	3	1	0	4
11	MMA 215150	Mathematical Modelling (Proposed)	3	1	0	4
12	MMA215160	Integral Transforms(Proposed)	3	1	0	4
13	MMA215170	Numerical Optimization Techniques (Proposed)	3	1	0	4

List of electives for 4th Semester						
Sl. No.	Course Code	Course Title				CR
			L	T	P	
1	MMA 226050	Artificial Intelligence and Hybrid Systems	3	1	0	4
2	MMA 226060	Algebraic Number Theory	3	1	0	4
3	MMA 226070	Statistics III	3	1	0	4

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4	MMA 226080	Difference Equations and Discrete Dynamic Systems	3	1	0	4
5	MMA 226090	Coding Theory	3	1	0	4
6	MMA 226100	Operator Theory	3	1	0	4
7	MMA 226110	Operating Systems	3	1	0	4
8	MMA 226120	Relational Database Management Systems	3	1	0	4
9	MMA 226130	Classical Mechanics(Reshuffled from third semester)	3	0	1	4
10	MMA226140	Tensor Algebra(Proposed)	3	0	1	4
	MMA226150	Differential Manifold (shifted from compulsory to elective)				

Semester-I

Numerical Analysis (Revised) (3-1-0- 4)

Unit I: Interpolation Theory: Hermite Interpolation, the general Hermite interpolation, Spline interpolation problem.

Approximation of functions: The Minimax and Least squares approximation problem. Orthogonal polynomials, The Least squares approximation problem using orthogonal polynomials. Minimax and Near-minimax approximations.

Unit II: Numerical Integration: Gaussian Quadrature. Asymptotic error formulas and their applications. Automatic numerical integration. Multiple Integrals, Singular integrals.

Unit III: Numerical Solution of Ordinary differential equations: Numerical solutions of IVP – Difference equations, stability, error and convergence analysis. Single step methods - Taylor series method, Euler method, Picard's method of successive approximation, Runge-Kutta method. Multi step methods – Predictor-Corrector (PC) method, Euler PC method, Milne and Adams Moulton PC method. System of first order ODE, higher order IVPs. Numerical solutions of BVP – Linear BVP, finite difference methods, shooting methods, stability, error and convergence analysis, nonlinear BVP, higher order BVP.

Numerical Solution of Partial Differential Equations. – Initial/boundary value problems for parabolic and hyperbolic PDEs (one space and one time dimension). – Explicit finite-difference schemes. Implicit finite-difference schemes.

Unit IV: Numerical solution of systems of linear equations: Quick review of direct methods for solving linear systems, error analysis. The residual correction method. Iteration methods, Error prediction and Acceleration. **The Matrix Eigenvalue problem:** Review of Eigenvalue location, error, and stability results, Power method. Orthogonal transformations using Householder matrices. The eigenvalues of a symmetric Tridiagonal matrix. QR method. The calculation of Eigenvectors and Inverse iteration.

Lab Components: Exposure to MATLAB/Mathematica/SciLab and computational experiments based on the algorithms discussed in the course.

Pilani