

# DEPARTMENTAL REPORT PROFORMA

Report for the Department of **Mathematics** Year 2018 – 2019

1. Name of the Teacher Incharge of the Department: **Dr. Anu Saxena**
2. Attendance 2018- 2019

Teacher	Class	No. and Topic of Paper	No. of Lectures Delivered	No. of students in different attendance categories					
				85% & above	80% & above but less than 85%	75% & above but less than 80%	70% above but less than 75%	66.6% & above but less than 70%	Less than 66.6%
Dr. Indrakshi Dutta	Bsc. Hons 6 <sup>th</sup> sem	Ring Theory & Linear Algebra II	28	17	5	6	8	8	15
	Bsc. Hons 4 <sup>th</sup> sem	Ring Theory & Linear Algebra I	37	12	8	7	0	2	11
	Bsc. Hons 2 <sup>nd</sup> Sem	Differential equations & modeling	23	26	04	04	01	03	03
	B.el.ed 2 <sup>nd</sup> year	Mathematics O.2.3	67	6	5	00	00	00	00
Ms. Rama Saxena	Ist year Eco(H)	Generic Elective- III Linear Algebra	50	23	3	2	1	1	1
	IIInd year	Generic	44	20	1	2	0	2	5

	Eco(H)	Elective- IV Elements of Anaysis							
	IInd year B.sc(Hons) Mathematics	C-9 Riemann Integration and series of Functions	25	11	4	3	5	1	16
	IInd year B.El.Ed	Maths- I O2.3	23	6	2	1	2	0	0
Ms. Richa Krishna Sharma	B.A (Prog) Ist year	Algebra	23	4	4	2	3	2	10
	B.A (Prog) IInd year	Analysis	63	1	3	2	2	3	10
	B.Sc(H) Mathematics IInd year	Riemann Integration and series of Functions	46	15	3	5	5	2	10
Dr. Ambika Bhambani	B.A (Prog) Ist year	Algebra	33 (L) + 10 (T)= 43 total	7	3	4	2	2	7
	B.A (Prog) IInd year	Statistics	27 (L) + 6- 9(T)= 33-36 total	1	1	0	0	1	26
Dr. Alka Marwaha	B.Sc(H) Mathematics IIIrd year	Complex Analysis	57	11	6	8	9	6	19
	B.Sc(H) Mathematics IIIrd year	Mechanics	31	0	0	0	1	0	1

Ms. Sunita Narain	B.Sc.Maths Hons.1 <sup>st</sup> yr	Real Analysis	35	36	2	0	2	0	1
	B.Sc.Maths Hons-1 <sup>st</sup> yr	Diff. Equations	38	28	4	3	3	2	2
		Economics Hons.2 <sup>nd</sup> yr	Elements of Real Analysis	23	18	3	3	1	0
Dr. Anu Ahuja	MT (H) III	Linear Programming & Game Theory	52	15	6	5	3	7	23
	MT (H) II	Ring Theory & Linear Algebra	24	13	3	2	1	6	15
	BA (P) III	SEC (III) Transportation & Network Flow Problems	24	0	1	0	3	0	20
Dr. Rashmi Sehgal Thukral	MT (H) III	Probability and Statistics	Lectures - 47 Tutorials - 11	33	8	10	2	1	7
	MT (H) II	PDE Practicals	Group 1 - 32	13	3	2	0	0	3
			Group 2 - 27	9	1	4	4	0	4
Dr. Shikha	MT(H) III	Complex Analysis including Practicals (Practicals)	Group 1 - 31	5	3	1	3	1	2
			Group 2 - 31	7	4	2	7	1	1

Dr. Monica Rani	MT(H) II	Partial Differential Equations	34	14	8	3	3	2	11
	BA(P) III	Transportation and Network Flow Problems (Practicals)	Group 1 - 22	3	0	3	2	4	4
			Group 2 - 20	4	1	1	2	2	3
	BA(P) III	Statistics	22	6	1	6	4	2	10
	Eco(H) I	Generic Elective- III Linear Algebra	20	16	4	2	4	0	5
	B.Sc(H) IIIrd year	Mechanics	26	0	2	0	0	0	0
	B.Sc(H) IIIrd year	Complex Analysis Practical (grp C)	30	8	2	0	2	0	10
	B.Sc(H) IIInd year	P.D.E	22	21	3	0	6	1	9
	B.Sc(H) IIInd year	Computer Algebra Systems and related Softwares							
		Theory Practical	20	18	4	4	3	0	10
	Group 1	36	7	2	5	1	1	2	
	Group 2	34	9	3	1	1	1	7	
Third year O3.3	B.El.ED	14	5	0	1	2	0	1	

3. College Society for which teachers in the Department are responsible:

Name of Teacher	Society	Indicate Convenor/Member	No. of students participated	Venue	Date
DR. Indrakshi Dutta	Student Aid Fund Committee	Member	29 students were given fee waiver & financial aid		
Ms. Rama Saxena	Time-Table Committee	Convenor			
Ms. Richa Krishna Sharma	English Quiz Society	Convenor			
Dr. Ambika Bhambani	Study Leave Committee	Member			
Dr. Alka Marwaha	IQAC	Coordinator			
Ms. Sunita Narain	Placement Cell	Convenor			
Dr. Anu Ahuja	IQAC	Member			
Dr. Rashmi Sehgal Thukral	NAAC Criterion - 2	Member			
Dr. Shikha	NAAC Criterion - 7	Member			
Dr. Shikha Dr. Monica Rani	Green Society Green Society	Member Member			

4. Co-curricular programmes arranged by the Department:

Name of Teacher	Programme	Teachers Involved	Award, if any	Venue	Date
1.I.Dutta	Departmental Trip to Jaipur	I.Dutta , A.Marwaha & Shikha			28 <sup>th</sup> to 30 <sup>th</sup> September 2018
	Freshers Social	I.Dutta , Rama Saxena ,Sunita Narain ,Rashmi Sehgal, Richa Krishna ,Anu Saxena,Shikha & Monica		Lecture Room 408	5 <sup>th</sup> September 2018
	Teachers Day				
	Annual Fest Matherena			MPH & 3rd Floor Hall	30 <sup>th</sup> January 2019
	Talk on Number Theory	I.Dutta ,Ambika Bhambani, Rama Saxena, Rashmi		3 <sup>rd</sup> Floor Hall	20 <sup>th</sup> February

	March Past	Sehgal ,Monica & Shikha I.Dutta ,Shikha, Monica and students		Sports Ground	7th March
	Fare well	I.Dutta,Shikha,Monica		Lecture Room 408	24 <sup>th</sup> April
	Departmental Assembly	Arranged by 1 <sup>st</sup> and 2 <sup>nd</sup> year students			1.21 <sup>st</sup> aug 2.18 <sup>th</sup> September 3.30 <sup>th</sup> October 4.22 <sup>nd</sup> January 5.16 <sup>th</sup> April

5. Students in the Department who participated in extra-mural, co-curricular activities within and outside College:

Name of Student	Programme	Teachers involved	Award, if any	Venue	Date
21 Students from JMC Participated	Madhava Mathematics Competition Exam 2019	Dr. Alka Marwaha, Dr. Shikha	Additi Pandey(MT(H) 1) - Stood second in JMC and Received certificate. Melisa Jiji(MT(H) 1) - Stood fourth in JMC and Received certificate. Shreya Satija (MT(H) 3)- Stood third in JMC and Received certificate. Surbhi (MT(H) 1)- Stood first in JMC, Received certificate and selected for Madhva Nurture Camp	Centers : Deen Dyal Upadhyaya College and Miranda House	6 January, 2019

			to be held on 6-11 June, 2019.		
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6. Number of students of the Department who have participated in Community Development programmes:

Year	NSS	JMCEP	WDC	NCC	Peace	Green	Any other
I Year							
II Year							<b>Bapu Dham School Project</b> The following 16 students actively participated in this project:  Apoorva, Soni, Nishita, Teres, Jessintha, Neha, Anu, Madhurta, Pranshi, Riya, Sheetal, Megha, Vidhi, Ananya, Tanya, Yukti
III Year							

7. University assignments undertaken by teachers of the Department.

Dr. Alka Marwaha: Taught 'Measure and Integration' paper to postgraduate students at South campus

Dr. Indrakshi Datta is the member of B.el.ed Syllabus Committee for Maths Optional Paper

8. Publications (books, research papers/articles and book reviews) by members of the Department during the course of the academic year. Format is given as follows:

(a) For books: Surname, Name (Year of Publication), Title of Publication, Place of Publication, Publisher, ISBN No.

1. Shikha, Ahmad Taher Azar, and Quanmin Zhu. "Multi-switching Master–Slave Synchronization of Non-identical Chaotic Systems." *Innovative Techniques and Applications of Modelling, Identification and Control*. Springer, Singapore, 2018. 321-330.

2. Shikha, Azar AT, Bhat MA, Vaidyanathan S, Ouannas A. Active Control for Multi-Switching Combination Synchronization of Non-Identical Chaotic Systems. In *Advances in System Dynamics and Control* 2018 (pp. 129-162). IGI Global.

3. Shikha, Azar AT, Vaidyanathan S, Ouannas A, Bhat MA. Multiswitching Synchronization of Commensurate Fractional Order Hyperchaotic Systems Via Active Control. In *Mathematical Techniques of Fractional Order Systems* 2018 (pp. 319-345).

4. Khan A, Shikha, Azar AT, Zhu Q. Synchronization Between a Novel Integer-Order Hyperchaotic System and a Fractional-Order Hyperchaotic System Using Tracking Control. In *2018 10th International Conference on Modelling, Identification and Control (ICMIC) 2018 Jul 2* (pp. 1-8). IEEE.

5. Monica Rani, (to appear in 2019), Reliability optimization through redundancy allocation with fuzzy uncertainty, *Inter-disciplinary Mathematical Sciences*, Springer publications

(b) For research article: Surname, Name (Year of Publication), Title of Paper, Journal in which published, ISBN No., Page No.

1. Khan, Ayub and Shikha. "Chaotic analysis and combination-combination synchronization of a novel hyperchaotic system without any equilibria." *Chinese Journal of Physics* 56.1 (2018): 238-251.

2. Khan, Ayub, and Shikha. "Generalization of combination-combination synchronization of n-dimensional time-delay chaotic system via robust adaptive sliding mode control." *Mathematical Methods in the Applied Sciences* 41.9 (2018): 3356-3369.

3. Khan, A., Singh, S. and Azar, A.T., 2019, March. Combination-Combination Anti-Synchronization of Four Fractional Order Identical Hyperchaotic Systems. In *International Conference on Advanced Machine Learning Technologies and Applications* (pp. 406-414). Springer, Cham.

4. **Rani, Monica (to appear in 2019), Reliability optimization of sugar mill using Markov Approach, ISA Transactions, Elsevier, 0019-0578**

9. Participation of faculty in:

- a. International conferences held abroad, with topic, place and dates
- b. Conferences held in India, with topic, place and dates

Dr. Shikha presented a paper entitled "Combination-Combination Synchronization of Fractional Order Hyperchaotic Systems" in "Conference On Nonlinear Systems and Dynamics" held at Jawaharlal Nehru University, during October 11-14, 2018.

c. Refresher & Orientation courses (as resource persons)

Name of the Teacher	Dept	Name of Conference/ Seminar/Meeting/	Nature of Participation	Venue	Date
Ms. Sunita Narain		Orientation Programme on Management of Skill Development at Higher Education	Attended	NIEPA	3/12/18 to 7/12/18
Dr. Monica Rani		Workshop on Regression Analysis using R	Delivered talk	Room no. 408, Jesus & Mary College	26/09/2018 to 21/01/2019

10. Honours received by faculty members at the international/national level

11. Talks and Seminars (National/International) organized by the Department



12. Outstanding visitors to the Department in the course of the academic year:

Name	Designation	Purpose of visit	Date
Dr. Santha Laishram	Associate Professor	Talk on Number Theory	20 February 2019
Mr. Bhanuprakash	Student (St. Stephen's College, University of Delhi)	Talk on "A Mathematical Love Story"	30 January 2019

13. No. of Department meetings held in the course of the academic year: Documentation of meetings with proper Agenda and Minutes

14. Library: Budget for the year and its utilization

- a) Total no. of books appertaining to the subject in the College Library
- b) Amount of Library Budget available to the Department
- c) No. of new books added to the library for the Department in the year 2017-18

15. Laboratory Budget for the year:

- a) Indicate advantages experienced by the Department in the day to day work
- b) Disadvantages experienced by the Department
- c) Suggestions, if any

16. List of students who were awarded merit certificate

17. Alumni Day and other Alumnirelated activities/events held during the year

18. Review and Comparison with previous year's Department report.

19. SWOC Analysis

20. Future Plans

**Proforma for the Society Report  
2017 -2018**

1. Name of the Society : Mathematics Association
2. Name of the Teacher Convenor and other members : Dr. I Dutta , All faculty members
3. No. of students enrolled in the Society : 141
4. Names of Student President/Vice-President and other Office Bearers: President –Richa Bhatia ,Secretary –Neha Sam ,Tresurer –Yashika
- 5.
6. Events /Talks by eminent personnel/organized/ attended in the academic year (in the chronological order with full details)
7. Talk on Number Theory by Dr. Santha Laishram on 20<sup>th</sup> February 2019
8. Achievements/Recognitions/Awards won
9. Social extension activities undertaken by the Society (both within and outside the College)
10. Minutes of the meetings held during the years
11. Record of attendance of participation by students: above 90 %

0% - 25%

25% - 50%

50% - 75%

75% - 90%

Above 90%

12. Any other significant information