Aryabhatta College

Department of Mathematics

(Annual Report for the Academic session 2021-22)

1) Name of Teacher in Charge: **Dr. Chandrashekhar Nishad**

2) Brief details of Faculty members:

Name	Qualification	Designation	Specialization	Teaching Experience (Years)	Permanent/Temporary/Ad-hoc/Guest
Prof. Narender Kumar	Ph.D.	Professor	Mathematical Programming and Optimization	27 Year 9 month	Permanent
Dr. Naveen Kumar Jain	Ph.D.	Assistant Professor	Complex Analysis and Functional Analysis	10	Permanent
Dr. Yogender Singh	Ph.D.	Assistant Professor	Optimal Control Theory	10	Permanent
Mrs. Aakanksha Singh	M.Sc.	Assistant Professor	Optimization Theory	10	Permanent
Mr. Gufran malik	M.Tech.	Assistant Professor	Approximation Theory	10	Permanent
Dr. Chandrashekhar Nishad	Ph.D.	Assistant Professor	Fluid Dynamics	7	Permanent
Mr. Dheeraj Singh	M.Phil.	Assistant Professor	Valuation Theory (Algebra)	3	Ad-hoc
Dr. Rattan Lal	Ph.D.	Assistant Professor	Abstract Harmonic Analysis	1	Ad-hoc

3) Student Strength

First Year	Second Year	Third Year
51	65	39

4) Details of publication work by the faculty members

Serial No.	Author	Title	Journal/Conferece	Volume, Year, Page No.	Publisher /ISSN No. / Int. Database	Refereed
1.	Prof. Narender Kumar	DUAL COMBINATION-COMBINATION SYNCHRONIZATION OF TIME DELAYED DYNAMICAL SYSTEMS VIA ADAPTIVE SLIDING MODE CONTROL UNDER UNCERTAINTIES AND EXTERNAL DISTURBANCES	International Journal of Dynamics and Control, Springer,	Vol. 9(2) (2021), 1-18.		SCOPUS
2.	Dr. Naveen Kumar Jain	Certain Estimates of Normalized Analytic Functions	Math. Slovaca	2 (2022), No. 1, 85–102.		SCIE (Impact Factor: 0.996.)
3.	Dr. Naveen Kumar Jain	Mittag-Leffler Operator Connected with Certain Subclasses of Bazilevic Functions,	Journal of Mathematics,	Volume 2022, Article ID 2065034, 7 pages.		SCIE (Impact factor: 0.971)
4.	Dr. Naveen Kumar Jain	Sharp Bohr Radius Constants for Certain Classes of Analytic Functions,	Bulletin of the Malaysian Mathematical Sciences Society (2)	44(2021), no. 3, 1771-1785.		SCIE (Impact factor: 0 .843)
5.	Dr. Naveen Kumar Jain	Radii Constants for Functions with Fixed Second Coefficient	Mathematics	2022, 10(23), 4428		SCIE (Impact Factor:2.592.)

6.	Dr. Naveen Kumar Jain	Differential Subordinations for Functions with Positive Real Part Using Admissibility Conditions	Asian-Eur. J. Math.	**15** (2022), no. 4, Paper No. 2250066, 22.		Scopus
7.	Ms. Aakanksha Singh	Bilevel transportation problem in neutrosophic environment	Computational and Applied Mathematics	41(1), 1-25 (2022)	Springer	SCI(E), Scopus Indexed

- **Award:** Ms. Aakanksha Singh was awarded with a design patent entitled "SAMAY SEEMA" with patent number 333531-001.

Conference Presentations:

1. Ms. Aakanksha Singh presented a paper on "An Aspect of Bilevel Indefinite Quadratic Transportation Problem under Intuitionistic Fuzzy Environment", Proceedings of 7th International Conference on Fuzzy Systems and Data Mining (FSDM 2021) from 26th –29th October 2021. ISBN: 978-1-64368-215-0(online).
2. Ms. Aakanksha Singh presented a paper on "On Solving Multi- Objective Transportation Problem with Spherical Fuzzy Numbers" in International Conference on Advances in Smart Materials & Emerging Technologies (ASMET-2021) organized by Department of Applied Sciences and Humanities from 20th -21st December 2021. (ISBN: 978-9-3930-2701-6).
3. Presented a research paper entitled "Mixed Lagrangian and Multiobjective Fractional Programming Duality with Generalized F-Convex n-Set Functions" in the Sixth International Conference of the Association of Asia Pacific Operational Research Societies within AFORS (APORS 2003) held at New Delhi, India during December 8-11, 2003.

5) Participation of faculty members in seminars/workshops ,etc :

1. Dr. Naveen Kumar Jain participated in online 5-Days National Workshop on'Vedic Mathematics' held from 6th-11th January, 2022 organized by the Department of Mathematics, Swami Shraddhanand College in collaboration with Shiksha Sanskriti Utthan Nyas, New Delhi.
2. Dr. Naveen Kumar Jain participated in Two Weeks Online Workshop on "Vedic Mathematics" organized by Mahatma Hansraj Faculty Development Centre (MHRFDC), Hansraj College in collaboration with Shiksha Sanskriti Utthan Nyas, New Delhi, 02nd December – 13th December, 2021.

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3. Dr. Naveen Kumar Jain participated in A one week International Faculty Development Programme on 'Advanced Linear Algebra' September 27– October 1, 2021 organised by Miranda House, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi.

4. Ms. Aakanksha Singh participated in the five days national level online workshop on "Software in Mathematics and Statistics" from 02 -06 August 2021, organized by the Department of Mathematics, National Institute of Technology Tiruchirappalli.

5. Ms. Aakanksha Singh successfully completed a one-week Faculty Development Programme on "Academic Writing" from 17 - 23 August 2021, organized by Teaching Learning Centre, Ramanujan College, University of Delhi.

6. Ms. Aakanksha Singh successfully attended the webinar on "Understanding Plagiarism Detection Software Ouriginal" on 28 January 2022 organized by University of Delhi in association with eGalactic Pune.

7. Mr. Gufran Malik successfully completed a one-week Faculty Development Programme on "Graph Theory and its Applications" from 15 - 22 September 2021, organized by Deshbandhu College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi.

8. Mr. Gufran Malik participated in the two days national level online workshop on "हमारे समृद्ध वैदिक गणित की झलक", from 10-11 Feb, 2022 organized by Department of Mathematics and IQAC Kalindi College in collaboration with शिक्षा संस्कृति उत्थान न्यास.

9. Dr. Chandrashekhar Nishad Two Week (Online) Interdisciplinary Faculty Development Programme on 'MOOC's, E-Content Development, Research Methodology and Statistical Tools in Open Education World organized by Kalindi College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi, held from 3rd August to 17th August 2021.

10. Dr. Chandrashekhar Nishad 5-Days National Workshop on 'Vedic Mathematics' organized by Department of Mathematics, Swami Shraddhanand College. in collaboration with SHIKSHA SANSKRITI UTTHAN NYAS, DELHI PRANT held from 6th January to 11th January 2022.

6) Achievement of Students including their participation in various societies
INTERNSHIP: 3 Students participated
SHORT TERM COURSE/ ADD ON COURSE: 3 Students participated
SEMINAR/CONFERENCE/WORKSHOPS ATTENDED: 3 Students.

7) Co-curricular Programmes conducted by the Department:
Talk/Webinar/Seminar
1. Online talk:
Speaker: Dr. Navnit Jha, Associate Professor in the Department of Mathematics at South Asian University.
Title of the talk: "Convection-Diffusion Model"
Date & Time of the talk: 28 th January, 2022 at 1:30pm

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2. alumni webinar:

Speaker: Mr. Mayank Bamola, Data analyst at IHS Markit. He holds a bachelor#39;s degree in Mathematics from Aryabhatta College (batch of 2016-19), University of Delhi. Currently, he is pursuing MCA from University School of information, Communication and Technology.

Title of the talk: "A glimpse of my journey from confusion to clarity"

Date & Time of the talk: 5 th January, 2022 at 11:30am

3. Talk:

Speaker: Dr. Devender Singh, Assistant Professor in the Department of English, Aryabhatta College, University of Delhi.

Title of the talk: "Aryabhatta and his contribution"

Date & Time of the talk: 18 th April, 2022.

8) Library Budget sanctioned for the Department: Rs 125000/-

9) (Strength, Weakness, Opportunities, Challenges) SWOC Analysis of the Department

- Strength: Dedicated educators who are ready to help and mentor the students beyond the classrooms. Facilities include a well-maintained computer lab and good resourceful books in the college library.
- Weakness: Lackness of add-on / certificate course.
- Opportunities: Teachers feel that they can better utilize technology in the classroom to create an improved learning environment for their students.
- Challenges: Students initially find it difficult to handle the abstract nature of the subject and sometimes don't push themselves to work hard or ask doubts from the teachers. Lack of peer-learning and unwillingness to study is another challenge faced by the teachers.

10) Future Plans of the Department

- To Collaborate with reputed institutions for various academic activities such as to organize seminars, workshops, FDP and many more.
- To initiate research projects.
- To organize certificates, add-on courses.
- To conduct workshops for students to enhance their skills in application of mathematics.

Dr. Chandrashekhar Nishad
(TIC Mathematics).