Prof. Rakesh Batra

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QUALIFICATIONS

- Ph. D. from University of Delhi in 2016.
- M. Phil. from University of Delhi**(84 % Marks)**in 2005.
- N.E.T. with JRF qualified in 2003 and appeared in S.P.M. Fellowship Test meant for 20 percent toppers among JRFs of an year.
- G.A.T.E. qualified
- M.Sc. Mathematics from Hansraj College, University of Delhi in 2002.**(93 % Marks with *Ist Position in DU in Ist year and 88.6 % Marks with 3rd Position in DU in final aggregate)***
- B.Sc. (H) Mathematics from Rajdhani College, University of Delhi in 2000**(84% Marks with *Ist Position in the College)***

THESIS

Coincidences and Fixed Point Theorems on Metric Spaces

SPECIALISATION

Fixed Point Theory

EDUCATION

Ph. D. Mathematics   2012 — 2016
University of Delhi

Coincidences and fixed point theorems on metric spaces

M.Phil. Mathematics   2002 — 2005
University of Delhi

84 Percent
Uncertainty Principle on Locally Compact Groups

M.Sc. Mathematics   2000 — 2002
Hansraj College, University of Delhi

88.6 Percent

B.Sc. (H) Mathematics   1997 — 2000
Rajdhani College, University of Delhi

84 Percent

WORK EXPERIENCE

Hansraj College   28.08.2006 — 13.10.2009
Assistant Professor, Department of Mathematics (PB3, AGP 6000)

Teaching, Research, Administrative work, Examination conduct and Evaluation

Hansraj College   14.10.2009 — 13.10.2014

Assistant Professor, Department of Mathematics (PB3, AGP 7000)

Teaching, Research, Administrative work, Examination conduct and Evaluation

Hansraj College   14.10.2014 — 31.12.2015

Assistant Professor, Department of Mathematics (PB3, AGP 8000)

Teaching, Research, Administrative work, Examination conduct and Evaluation

Hansraj College   01.01.2016 — 13.10.2017

Assistant Professor, Department of Mathematics (Academic Pay Level 12))

Teaching, Research, Administrative work, Examination conduct and Evaluation

Hansraj College   14.10.2017 — 13.10.2020

Associate Professor (Academic Pay Level 13A)

Teaching, Research, Administrative work, Examination conduct and Evaluation

Hansraj College   14.10.2020 — Till date

Professor(Academic Pay Level 14)

PERIOD OF TEACHING EXPERIENCE

- Lecturer in Bhaskaryacharya College of Applied Sciences, University of Delhi (Pay Scale 8000-13500) on Ad-hoc basis from September 15, 2004 to July 15, 2005.
- Lecturer/Assistant Professor in S.G.T.B. Khalsa College, University of Delhi (Pay Scale 8000- 13500/PB-3, AGP 6000) on Ad-hoc basis from July 16,2005 to July 15,2006.
- Assistant Professor in Deen Dayal Upadhaya College, University of Delhi (Pay Band PB 3, AGP 6000) on temporary basis from July 17,2006 to August 28,2006(F.N.).
- Assistant Professor in Hansraj College (Pay Band PB 3, AGP 6000) on permanent basis from August 28, 2006 to October 13, 2009.
- Assistant Professor in Hansraj College (Pay Band PB 3, AGP 7000) on permanent basis from October 14, 2009 to October 13, 2014
- Assistant Professor in Hansraj College (Pay Band PB 3, AGP 8000) on permanent basis from October 14, 2014 to December 31, 2015.
- Assistant Professor in Hansraj College (Academic Pay Level 12) on permanent basis from January 01, 2016, 2016 to October 13, 2017.
- Associate Professor in Hansraj College (Academic Pay Level 13A) on permanent basis from October 14, 2017 to October 13, 2020)
- Professor in Hansraj College (Academic Pay Level 14) on permanent basis from October 14, 2020 till date)

Total Experience: 18 Years 06 Months (Approx.) as on 30/04/2023

SUBJECTS TAUGHT

Calculus, Analysis, Abstract Algebra,Discrete Mathematics, Boolean Algebra, Probability theory, Statistics, Differential Equations, Numerical Methods,Operational Research, Inventory Control, Algebraic Topology, Module Theory, Geostatistics

ADMINISTRATIVE ASSIGNMENTS

1. Portal Development Committee (2011-12)
2. Garden Committee (2012-13)
3. Canteen Committee
4. Student Welfare Committee (2011-12)
5. Hostel Committee (2011-12)
6. Academic Affairs Committee (2013-14)
7. Music Society (2014-15)
8. Finance Committee (2017-18, 2018-19)
9. Development Fund Committee (2017-18, 2018-19).
10. Polling Officer for DUSU Election from 2006-07 to 2019-20.
11. Departmental Seminar Committee
12. Departmental Admission Committee
13. Departmental Library Committee
14. Departmental Timetable Committee
15. Teacher In-Charge: Mathematics Department 2011-12
16. Deputy Coordinator : Central Evaluation Center 2017-19
17. Coordinator: Mahatma Hansraj Faculty Development Center 2018-19
18. Member, Library Committee, NCWEB, 2018-19.
19. TIC Non Collegiate Women's Education Board, Hansraj College Center 2018-20.
20. Member, Editorial Team, Aankalan, The annual journal of the Department of Mathematics. Volume I, February 2020.
21. Convener: Apex Committee on Online Teaching: 2020-21
22. TIC: Department of Mathematics 2020-21
23. Member: Steering Committee on Promotions: 2020-21
24. Member: ICT Enabling Committee: 2021-22
25. Convener: Grievance Committee: 2021-22

REFRESHER COURSES/ ORIENTATION PROGRAMMES

1. **Participated in the Orientation Programme (OR-69) organised by CPDHE, DU from December 13, 2011 to January 9, 2012.**
2. **Participated in the Refresher Course in Mathematics and Operational Research organised by CPDHE, DU from December 13, 2010 to January 4, 2011.**
3. **Participated in Advance Training in Mathematics School (ATML) in Geometric Complex Analysis held at Department of Mathematics , University of Delhi from March 21,2011 to April 2,2011.**
4. **Participated in Advance Training in Mathematics School (ATML) in Real Analysis and Measure Theory held at Institute of Life Long Learning, University of Delhi from March 26, 2012 to April 7, 2012.**
5. **Participated in Refresher Course in Mathematics/Operational Research/ Computer Science organised by CPDHE, DU from January 02, 2013 to January 22, 2013.**
6. **Workshop on Human Rights from 06 July 2015 to 11 July 2015 organised by Human Resource Development Centre and Centre for Professional Development in Higher Education, University of Delhi, Delhi.**
7. **Refresher Course in Mathematical Science organised by CPDHE, Delhi University from 30 August 2016 to 20 September 2016.**

8. Creative Drama Workshop at Hansraj College from 2nd to 20th January 2017.
9. Teacher's Enrichment Workshop on Differential Equations, Mathematical Modelling and analysis held at Deshbandhu college, New Delhi during July-24-29 2018.
10. Two weeks Faculty Development Programme on Challenges before the academia in the era of Gadgets, E-communication and A.I. (Interdisciplinary) from 15/12/2018 to 28/12/2018 organised by Mahatma Hansraj Faculty Development Center, Hansraj College, University of Delhi under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, MHRD, Government of India.
11. Two weeks Faculty Development Programme on Managing Online Classes and Co-Creating MOOCS 2.0 from May 18, 2020-June 30, 2020 organised by Teaching Learning Center, Ramanujan College, University of Delhi under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, MHRD, Government of India.

EXTENSION AND DEVELOPMENT ACTIVITIES

1. Mathematics Department Festival and Seminars, advise and counseling, cultural activities, Sports.
2. Worked in departmental and staff council committees, in student union elections as presiding officer and in admissions related worketc.
3. One day workshop on "Mathematica" on December 8, 2010.
4. "National workshop on Analysis" from September 27, 2008 to September 28, 2008.
5. National seminar on Transformation in Technology & Life From April 2,2007 to April 4,2007.
6. 13th Annual Conference of Jammu Mathematical Society from February 21-23, 2007.
7. 17th Annual Conference of Jammu Mathematical Society from March 31,2007 to April 3,2007.
8. International Congress and 8th Conference of Indian Society of Industrial and Applied Mathematics on Certain Emerging Areas in Applicable Mathematics, Department of Mathematics, University of Jammu, from March 31,2007 to April 3,2007.
9. International Conference on Operator Theory and Related Areas, Department of Mathematics, University of Delhi, January 9-12, 2008.
10. Advance Training in Mathematics School (ATML) in Geometric Complex Analysis held at Department of Mathematics , University of Delhi from March 21,2011 to April 2,2011.
11. Advance Training in Mathematics School (ATML) in Real Analysis and Measure Theory held at Institute of Life Long Learning, University of Delhi from March 26, 2012 to April 7, 2012.
12. International Conference "The Legacy of Srinivasa Ramanujan" University of Delhi, 17-22 December, 2012.
13. Level II of Mathematics Training and Talent Search Programme (Funded by NBHM) held at R.I.E.,Mysore from May 26, 2003 to June 14, 2003.
14. RMS-UGTE Workshop on "Finite Group And Applications" from 7th-9th February 2014 at Deshbandhu College, University of Delhi.
15. Ramanujan College Sponsored Faculty Development Programme on Computational, Mathematical and Statistical Techniques (CMST-2014) from

31st October 2014 to 1st November 2014.

16. **Workshop on Human Rights from 06 July 2015 to 11 July 2015 organised by Human Resource Development Centre and Centre for Professional Development in Higher Education, University of Delhi, Delhi.**

17. **Creative Drama Workshop at Hansraj College from 2nd to 20th January 2017.**

18. **Teacher's Enrichment Workshop on Differential Equations, Mathematical Modelling and analysis held at Deshbandhu college, New Delhi during July-24-29 2018.**

19. **Two weeks Faculty Development Programme on Challenges before the academia in the era of Gadgets, E-communication and A.I. (Interdisciplinary) from 15/12/2018 to 28/12/2018 organised by Mahatma Hansraj Faculty Development Center, Hansraj College, University of Delhi under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, MHRD, Government of India.**

20. **International Webinar on Importance of Cyber Security in the World of Pandemics and Social Media organised by Kamla Nehru College, University of Delhi on May 6, 2020.**

21. **Two weeks Faculty Development Programme on Managing Online Classes and Co-Creating MOOCS 2.0 from May 18, 2020-June 30, 2020 organised by Teaching Learning Center, Ramanujan College, University of Delhi under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, MHRD, Government of India.**

PROGAMMES ORGANISED

1. Organised Department Fest/Seminars as TIC in 2010.
2. Organised One Week Faculty Development Programme on ICT in Education and Cyber-Security from July 10-16, 2019/
3. Organised One Week Faculty Development Programme on Software Packages for Mathematical Sciences from November 14 to November 19 2018.
4. Organised cultural and sports activities for N.C.W.E.B. students in 2018-19 and 2019-20.
5. Member: organising team, International Conference on Recent Trends in Mathematics held at **Hansraj College from December 22 to December 24 2021.**

RESEARCH CONTRIBUTION

1. R. Batra and S. Vashistha, Coupled coincidence point theorems for nonlinear contractions under c-distance in cone metric spaces, Ann. Funct. Anal. 4(1) (2013), 138-148.

2. R. Batra and S. Vashistha, Coupled coincidence point theorems for nonlinear contractions under (F, g)-invariant set in cone metric spaces, J. Nonlinear Sci. Appl. 6(2) (2013), 86-96.

3. R. Batra and S. Vashistha, Some coupled coincidence point results under c-distance in cone metric spaces, Eng. Math. Lett. 2(2) (2013), 90--114.

4. R. Batra and S. Vashistha, Fixed point theorem for Fw-contractions in complete metric spaces, J. Nonlinear Analysis Appl. 2013 (2013), 1--6.

5. R. Batra and S. Vashistha, Fixed points of an F-contraction on metric spaces with a graph, Int. J. Comput. Math. 91(2014), no. 12, 2483--2490.

6. Rakesh Batra, Sachin Vashistha, Rajesh Kumar , "Coincidence Point Theorem for

a New Type of Contraction on Metric Spaces", Int. Journal of Math. Analysis, Vol. 8, 2014, no. 27, 1315 --1320, HIKARI Ltd, www.m-hikari.com, http://dx.doi.org/10.12988/ijma.2014.45147.

7. Rakesh Batra, Sachin Vashistha, Rajesh Kumar, "Coupled coincidence point theorems for mappings without mixed monotone property under c-distance in cone metric spaces", J. Nonlinear Sci. Appl. 7 (2014), 345--358.

8. Rakesh Batra, Sachin Vashistha, Rajesh Kumar, "A coincidence point therem for F -contractions on metric spaces equipped with an altered distance", J. Math. Comput. Sci. 4 (2014), no. 5, 826—833.

9. Rakesh Batra, Sachin Vashistha, Rajesh Kumar, "Fixed point theorems under w-distance on a metric space endowed with a graph", Journal of Nonlinear Analysis and Application, Volume 2015, No. 1 (2015), 57-65. http://dx.doi.org/10.5899/2015/jnaa-00258.

10. Rakesh Batra, Sachin Vashistha, Rajesh Kumar, "Fixed points for (G,φ)-contractions in vector metric spaces endowed with a graph", FILOMAT, Volume 31, No. 7 (2017), 2093-2101.

11. Rakesh Batra, "Common fixed points for F-dominated mappings", Global Journal of Pure and Applied Mathematics, Volume 13, No. 3 (2017), 885–892.

12. Rakesh Batra, Sachin Vashistha, "A generalized contraction principle under w-distance for a partially ordered metric space", Bulletin of the Malaysian Mathematical Sciences Society, Volume 40, No. 3 (2017), 1159-1174.

13. Rajinder Sharma and Rakesh Batra, "Fixed points in an intuitionistic menger space", Jordan Journal of Mathematics and Statistics, Volume 11, No. 2, (2018), 125-143.

14. Rakesh Batra, Ruchi Gupta, Priyanka Sahni, "Some results related to fixed points of F-G-contractions on metric spaces equipped with w-distance", Journal of Interdisciplinary Mathematics, Volume 23, No. 2, 2020.

15. Rakesh Batra, "Common best proximity points for proximally F-dominated mappings", Fasciculi Mathematici, No. 63, (2020).

16. Rakesh Batra, Ruchi Gupta and Priyanka Sahni,A new extension of Kannan contractions and related fixed point results. *J Anal* (2020). https://doi.org/10.1007/s41478-020-00241-1

17. Rakesh Batra, Ruchi Gupta, Priyanka Sahni, Fixed point existence results of F-Kannan type contraction on a metric space with directed graph, J. Math. Comput. Sci., 11 (2021), 5181-5195

18. Dori Lal, Rakesh Batra, Neeta Rani,Facets of Mathematics Education Towards Achieving Mathematics Competence in Children (Communicated April-2021)

19. Joginder Kumar, Neeta Rani, Rakesh Batra (2021)नईशिक्षानीति 2020 : एकशिक्षककीनज़रसे ! Edited Book Chapter, National Education Policy 2020: A Revamp of Indian Education System. Taurian Publications, Delhi.

E CONTENT DEVELOPED	Chapter titled "Taylor's Theorem and its Applications" published by Institute of Lifelong Learning, Delhi University with ISSN 2349-154X
CURRICULUM DEVELOPMENT	Participated in Curriculum Development Committee to frame syllabus for B.Sc. Programme CBCS of I.G.N.O.U.

CONFERENCE ETC. PAPER PRESENTED

1. Presented a research paper entitled Common fixed points for F-dominated mappings in the National Seminar on Recent Developments in Mathematics at Kalindi College, University of Delhi from January 12-13, 2017.
2. Presented a research paper entitled Mathematics in Unfamiliar Situations: A Case Study in the 8th National Conference on Teaching-Learning in Mathematics at Regional Institute of Education, Ajmer from December 19-21, 2019.

3. Chaired sessions in the International Conference on Recent Trends in Mathematics organized by MHRFDC Hansraj College from December 22 to December 24 2021.

REVIEWER FOR RESEARCH PAPERS

Acted as a reviewer for a research paper assigned by International Journal of Computer Mathematics, Taylor & Francis, UK.It can be verified at the link: http://www.tandfonline.com/doi/abs/10.1080/00207160.2013.867160?journalCode=gcom20#.Vcekkfmqqko

TALKS

1. Invited as a resource person at workshop for T.G.T. in govt. schools of Delhi organised by SCERT, Delhi.
2. Workshop on LATEX organized by Department of Mathematics, Hans Raj College, University of Delhi.
3. Conducted sessions on Basics of Mathematica, a mathematical computation software, in a 5-day INSPIRE programme sponsored by Government of India held at Hansraj College from December 12, 2017 to December 16, 2017.
4. Conducted Sessions on "Microsoft Teams" for the faculty of Hansraj College on 8th August, 2020 organised by Mahatma Hansraj Faculty Development Center, Hansraj College.
5. Resource person (Mentor) in Online Foundation Course in Mathematics 2020 (OFCM-2020) organized by MTTS trust with NBHM, Department of Atomic Energy, Govt of India.
6. Resource person (Mentor) in Mathematics Training and Talent Search Programme-2021 (MTTS-2021 Summer Camp) organized by MTTS trust with NBHM, Department of Atomic Energy, Govt of India.

OTHERS

1. Participated in Selection Committees to appoint lecturers in D.A.V. College Jalandhar.
2. Participated in Selection Committees of D.A.V. School Mukherjee Nagar to appoint P.R.T. teachers.
3. Participated in Selection Committe of D.A.V. School, Ashok Vihar to appoint P.G.T. Mathematics.
4. Judged the Regional Level Science Exhibition 2018-19 of C.B.S.E. at The Heritage School, Delhi on 18th January and 19th January 2019.
5. Invigilator in Practicals and College End Term Examinations.
6. Internal and External Examination for Practicals.
7. Evaluator in University Examinations.
8. Head Examiner/Examiner in Board of Paper Setters in End Term Examinations.

DECLARATION

I hereby undertake that the information provided is correct to the best of my knowledge as on December 25, 2021.

Signature

Place: Delhi