

RIE BHOPAL, Faculty Profile (Last five years from 2019-2025)

Full Name:	Dr. Rajat Kaushik			
Designation:	Assistant Professor (Mathematics)			
Department:	DESM			
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Education Qualification:	M.Sc. (IIT Roorkee), Ph.D. (IIT Roorkee)			
Teaching Experience:	1 year	Research Experience:	1 year	
Academic Identity: (i) ORCID Id with web link (ii) Scopus Author Id 57215414443 web link https://www.scopus.com/authid/detail.uri?authorId=57215414443 (iii) Researcher Institutional ID with web link (iv) Google Scholar Id with web link (v) Vidwan Id: with web link (vi) Research gate Id with web link https://www.researchgate.net/profile/Kaushik-5?ev=hdr_xprf				
Research Interest and Fields of Specialization MATHEMATICAL MODELING ON PREDATOR-PREY DYNAMICS, SIRS MODELS, MATHEMATICAL EDUCATION, MATHEMATICAL DYNAMICAL SYSTEMS				
Member of Academic Institutions (Board of Studies / Research Degree Committee/School Board) Present/ Past				

1. Membership of different Organizations

2. Research Supervision

(No. of Ph.D. Degree Awarded_____ and Registered_____)

(Number of M.Phil awarded in _____)

3. Research Projects (Completed and ongoing with title, type, fund allocated, duration and name of the funding agency)

1. Name of project: Development of practical lab manual as per ITEP Syllabus
Funded by : NCERT
Role: Principal Investigator
Status: Completed
2. Name of project: Training of KRP's of MP state on play/game-based learning of middle stage in environmental education using mathematics
Funded by : NCERT
Role: Principal Investigator
Status: On going

4. Administrative Experience

5. Scientific Visits Abroad/ International Collaboration

6. Conference/Symposium/Workshop Attended during (2019-2025)

- Mathematica as a Teaching Aid, organized by Department of Mathematics Indian Institute of Technology Roorkee (10 June-14 June, 2019)
- IGBC's First National Workshop on Green Hill Habitat, organized by Indian Institute of Technology Roorkee (23 August, 2019)
- High end workshop on Mathematical Modeling and Dynamical Systems with applications using Mathematica and Matlab. organized by Indian Institute of Technology Roorkee (July 11, 2022 – July 18, 2022)
- International conference on STEM: Vibrant Gujarat Global Summit, organized by Department of Education and Department of Science and Technology, Gujarat State under the aegis of Vibrant Gujarat 2019 (17 January, 2019)
- International conference on Differential Equations and Control Problems: Modelling Analysis and Computations, organized by Indian Institute of Technology Mandi (17 June-19 June, 2019)
- National System conference on Innovative and Emerging Trends in Engineering Systems, organized by Department of Mechanical and Industrial Engineering, Indian Institute of Technology Roorkee (6 Dec- 8 Dec, 2019)
- Symposium on Differential Equations: Analysis, Computation and Applications, Organized by Department of Mathematics, Indian Institute of Technology Roorkee (2 Dec- 3 Dec, 2021)
- Moderator in National conference ,e on Recent advances in interdisciplinary science held in RIE, NCERT, Bhopal (7-9 Feb 2025)

7. A) Research Papers Published in Journals last six years (2019-2025)

- Rajat Kaushik and Sandip Banerjee, Predator–Prey System: Bachelor Herding of the Prey Imposes Ecological Constraints on Predation, International Journal of Bifurcation and Chaos, Vol. 31 (Special Issue: 14), 2150211 (2021). (world scientific, SCOPUS, SCI Q1)
- Rajat Kaushik and Sandip Banerjee, Predator–prey system with multiple delays: prey's countermeasures against juvenile predators in the predator–prey conflict, Journal of Applied Mathematics and Computing, (Springer), 2021 (178) (SCOPUS, SCI, Q2)
- Rajat Kaushik and Sandip Banerjee, Predator-prey system: Prey's counter-attack on juvenile predators shows opposite side of the same ecological coin, Applied Mathematics and Computation, Vol. 388, 125530 (2021) (SCOPUS, SCI Q1)
- Rajat Kaushik and Sandip Banerjee, Predator–prey ecological system with group defense and anti-predator traits of the preys: Synergies between two important ecological actions, Mathematics open, Vol 2, 2350008 (2023) (world scientific)

B) ARTICLES PUBLISHED IN THE EDITED BOOK

- Rajat Kaushik and Sandip Banerjee, Predator–Prey System: Two Predators Feed on the Different Stages of a Single Prey, Advances in Systems Engineering, First Online: 24 January 2021, pp 273-280.
- Rajat Kaushik and Sandip Banerjee, Predator-Prey Model with Prey Group Defense and Non-linear Predator Harvesting, ICMMS 2018, First Online: 15 February 2020, pp 109-125

C) PAPER PUBLISHED (IN CONFERENCE PROCEEDING with ISSN Number)

- Rajat Kaushik, Bifurcation and hysteresis in 2-D fluid flow model, Published in Proceeding of International conference on STEM: Vibrant Gujarat Global Summit, ISBN 938829661-3
- Rajat Kaushik, SIRS System with Two Phases of infected individuals: A Key Component of Disease Control is Accurate Diagnosis in Primary Phase, Published in Proceeding of International conference on STEM: Vibrant Gujarat Global Summit, ISBN 938829661-3

D) PUBLICATION OF BOOKS (Both as Authored and Edited)

E) PREPARATION OF STUDY MATERIAL

F) EDITORSHIP OF RESEARCH JOURNAL

G) MOOCs

8) ORGANIZATION of SEMINAR/WORKSHOP/FDP/TRAINING PROGRAM

Organized 3 workshops under the project titled “Development of practical lab manual as per ITEP Syllabus”

9) Other Information if any

- IIT JAM 2013 AIR-9 (First attempt)
- Qualified NET JRF various times
- GATE-2015 AIR-21 (First attempt)
- CCS University topper in B.Sc. science stream
- First rank in Meerut Mandal in Intermediate
- Exceptional ability certificate by the Chief Election commissioner for scoring highest marks in B.Sc.
- VC GOLD MEDAL by Honorable Governor of UP
- Qualified UPPGT written examination with second highest written marks (didn't appear in the interview)
- Qualified Upesc, UPGDC, UP-Polytechnic and many other written competitive examinations
- Various awards in Hindi pratiyogita
- Reviewed many papers in SCI/SCOPUS indexed journals
- Invited speaker at NIT Raipur for delivering the talk Topic: New teaching methods (7-8 December 2024)
- Member of advisory committee in many national and international conference
- KEYNOTE SPEAKER in Roorkee college of Engineering, Roorkee Topic: Rate of convergence on Regula-Falsi and Newton-Raphson Methods.
- KEYNOTE SPEAKER in Roorkee college of Engineering, Roorkee Topic: Integrals of Complex Variables for the Multiple Connected Regions
- KEYNOTE SPEAKER in Dev Sanskriti Vishwavidyalaya, Gayatrikunj- Shantikunj, Haridwar. Topic: Mathematical Modelling in Real Life Problems.
- Resource person in Mathematica XPP-AUTO workshop, IIT Roorkee High end workshop on Mathematical Modeling and Dynamical Systems with applications using Mathematica and Matlab., July 11, 2022– July 18, 2022
- Resource person for orientation programme on NCERT mathematics kit (1-3 March 2024)
- Subject expert for TGT interviews in Jawahar Navodaya School and participated in different level institute committees.
- Resource person for training programme for Virtual lab at RIE, NCERT, Bhopal