

BIO-DATA

Name & Designation : **Dr. (Mrs.) Rekha Bali, Professor**
Date of Birth : 26th June 1964
University : Harcourt Butler Technical University Kanpur

A. Academic Qualification:

Exam Passed	Year	Univ.Inst.	% Of Marks	Subject
High School	1979	U.P. Board	69.0%	Sci., Math., Bio., Hindi, English
Intermediate	1981	U.P. Board	67.4%	Chemistry, Math., Physics, Hindi, English
B.Sc.	1983	Kanpur University	68.0%	Math., Physics, Electronics
M.Sc.	1985	Kanpur University	68.4%	Mathematics
Ph.D.	1988	H.B.T.I. Kanpur		Mathematics

Thesis Title: Analytical study of flow and diffusion in modelled physiological systems

Supervisor : Prof. P.N Tandon

B. Service Record

Sl. No	Name of Employer	Post Held	Period		Pay Band / Pay Scale and AGP / Basic Pay
			From	To	
1.	HBTI Kanpur, in Project Sponsored by D.S.T ,New Delhi	J.R.F	6.1.86	26.11.87	Rs. 800(fixed)+ H.R.A
2.	HBTI Kanpur, in Project Sponsored by D.S.T ,New Delhi	Scientist	26.11.87	7.4.89	Rs. 2200 – 4000/-
3.	HBTI Kanpur	Lecturer	7.4.89	6.4.94	Rs. 700 - 1600/-
4.	HBTI Kanpur	Sr. lecturer	7.4.94	6.4.99	Rs. 3000 – 5000/-
5.	HBTI Kanpur	Assistant Professor (Redesignated as Associate Professor from 1.1.06)	7.4.99	7.4.07	Rs. 12000-18300/-
6.	HBTI Kanpur	Professor	7.4.07	Continuing	Rs.37400- 67000/-

C. Courses Taught:

S.no.	Subject	Code	Level
1.	Engineering Mathematics-1	NMA 101	1 st B.Tech
2.	Statistical Methods	NMA 213	2 ND BS/MS
3	Probability and statistics with RZ	BMA 587	1 st MSC
4	Differential equations	NMA 213	2 ND MSC
5	Theory of Advanced differential equations	BMA 754	PHD COURSE
6	Computer Oriented Numerical Methods (Theory cum lab course)	BMA 202	2 nd BTech. (CH,LT,BE,FT,PL,OT,PT)
7	Computer Oriented Numerical Methods (Theory cum lab course)	BMA 206	2 nd BTech. (ME,CE,EE,ET)
8	Probability and Statistics for Engineers	BMA 514	1 st MTECH(ESE)
9	Computer Oriented Numerical and Statistical Techniques	BMA 253	2 nd Btech (ET,CS,IT)
10	Engineering Mathematics		1 st Mtech (stream c)
11	Mathematics 1	BMA 101	1 st BTech. All Branches(odd Semester)
12	Mathematics 2	BMA 102	1 st BTech. All Branches(Even Semester)
13	Mathematics 3	BMA 301	2 nd BTech All Branches (odd Semester)

D. Research Guidance:

S. No.	Level	No. of students Enrolled	Thesis Submitted / in Progress	Degree award
1.	Ph.D.	1	Awarded	Awarded (2001)
2.	Ph.D.	1	Awarded	Awarded (2012)
3.	Ph.D.	1	Awarded	Awarded (2014)
4.	Ph.D.	1	Awarded	Awarded (2017)
5.	Ph.D.	1	Awarded	Awarded (2018)
6.	Ph.D.	1	Awarded	Awarded (2024)

7.	Ph.D.	1	In Progress	Registered (2021)
8.	Ph.D.	1	In Progress	Registered (2022)
9.	Ph.D.	1	In Progress	Registered (2023)
10.	Ph.D.	1	In Progress	Registered (2023)

E. Project Completed:

S.no.	Title of the Project	Name of the Sponsoring Agency	Amount (Rs.)	Tenure of the Project	Completed	Name and Address of the Principal Investigator
1.	Some Problems on heat and mass transfer in Bio Systems	Sikander Tanners Ltd. Kanpur	20000/-	Two Years	Completed	Dr. Rekha Bali
2.	A study of Flow and diffusion problems in human system	Friends Equipments ,Kanpur	20000/-	Two Years	Completed	Dr.Rekha Bali
3	Mathemaatical Modelling of Microcirculation	UGC, New Delhi	4,82,800/-	Three Years	Completed	Dr.Rekha Bali

F. Research Publication

a) Publications in Journals

1. Tandan, P.N., Agarwal R., Microstructural effects on blood flow through tube with small developing stenosis, J. of the Institution of Engr. India, Vol. 66, (1986).
2. Tandan, P.N., Agarwal R., Flow of viscous fluid in a contracting or expanding pipe, A simple model for human bronchial tube, GANITA, Vol. 37(2) (1986). 74-85.
3. Tandon, P.N., Nirmala, P., Pal T.S., Agarwal, Rekha, Rheological study of Lubricant gelling in Synovial joints during articulation, Int. J. App. Math Modelling, Vol. 12 (1988) 72-77
4. Tandan, P.N., Agarwal R., A study of nutritional transport in synovial joints, Int.J. of Computer and Mathematics with applications, Vol. 27 (1989) 1131-1141.
5. Tandon, P.N., Bali, Rekha, A Study on temperature regulation in synovial joint, Tribology Letters, USA, 209-213(1997).
6. Bali, Rekha, Shukla, A.K., Rheological effect of synovial fluid on nutritional transport, Tribology letters, USA, Vol.9, No.3-4 (2000) 233-239.
7. Bali, Rekha, Shukla, A.K., A biphasic model for hip joints replacement, Tribology letters, USA, Vol. No.13 (3), (2002) 187-195.
8. Bali, Rekha, Shukla, A.K., A simple model for temp. regulation in synovial joint, Ultra Science, Vol. No.15, No.1, (2003) 109-116.

9. Tandon, P.N., Chaurasia, amita, Bali, Rekha, Shukla, A.K., A model for Knee joint articulation, *Ultra Science*, Vol. 15 (3) M (2003).
10. Tandon, P.N., Bali, Rekha, Siddiqui, S.U, Shukla, A.K. , A study of Nutritional transport in pulsatile Blood flows through time dependent, stenotic tube, *Ultra Science* , Vol. 16 (2) M.(2004) 199-204.
11. Bali, Rekha, shukla, A.K., Sharma, S.K., A Non linear model forlubrication in synovial joints, *Ultra Science*, Vol. 16 (3) M.(2004) 333-342.
12. Bali, R., Sharma, S.K., Effect of Magnetic field in lubrication of synovial joints, *Tribology letters*, USA, (2005) 281-287.
13. Bali, Rekha, Dubey, Shraddhya, Effect of Magnetic field on blood flow through capillary, *Ultra Science*, Vol. 19 (2) M.(2007) 319-326
14. Bali, Rekha, Awasthi, Usha, Effect of Magnetic field on Resistance to blood flow through in stenotic artery, *Applied Mathematics and computation*, USA, Vol.188 (2007) 1635-1641.
15. Bali, Rekha, Mishra, Swati, Dubey, Shraddhya, A Mathematical model for red cell motion in narrow capillary surrounded by tissue, *Applied Mathematics and computation*, USA, Vol.196 (2008) 193-199.
16. Bali, Rekha, Awasthi Usha. A Mathematical model for oxygen transport in capillary tissue Exchange system in the presence of Magnetic field, *International Journal of Physical Science*, Vol.20 (3) (2008) 593-604.
17. Bali, Rekha, Mishra, swati, Tandon, P.N., Effect of Glycocalyx on Red blood cell motion in capillary surrounded by Tissue, *International Journal (AAM)*, USA, Vol. 4 No. 1 134-148 (2009).
18. Bali, Rekha, Sharma, S.K., Viscoelastic effects on the unsteady convective diffusion in a synovial fluid of human joint, *International Journal of Theoretical and Applied Mechanics*, Vol. 4 No. 2 119-134 (2009).
19. Bali, R., Shukla, A.K., Sharma, S.K., A Bi-Phasic Model for Artificial Replacement in Human Knee Joint, *International Journal of Applied Mechanics and Engineering*, Vol. 14 No. 3 633-643 (2009).
20. Bali, Rekha, Sharma, S.K., A Model for Intra-Articular Heat Exchange in a Knee Joint, *Tribology letters*, USA, Vol. 41 379-386.
21. Bali, Rekha, Awasthi, Usha, Study of an Oxygenation process in Capillary in the presence of magnetic field, *International Journal of Mathematics Analysis*, Vol. 4 No.35, 1697-1706 (2010).
22. Bali, Rekha, Mishra, Swati, Mishra, Mamta, Effect of Deformation of red cell on Nutritional transport in capillary tissue exchange system, *Applied Mathematics*, Vol. No. 2 1417-1423 (2011).
23. Bali, Rekha, Awasthi, Usha, Mathematical Model of Blood Flow in Small Blood Vessel in the Presence of Magnetic Field, *Applied Mathematics*, Vol.2, 246-249 (2012).
24. Bali, Rekha, Mishra, Swati, Tandon, P.N.,A simple model for squeezing flow of red blood cell in narrow capillary, *Advances in Applied Sciences*, Vol. No. 3(3) 1353-1360 (2012).
25. Bali, Rekha, Awasthi, Usha, A Casson Fluid Model for Multiple Stenosed Artery in the Presence of Magnetic Field, *Applied Mathematics*, Vol. No.3, 436-441 (2012).
26. Bali, Rekha, Mishra, Swati, Tandon, P.N., A Study of fluid filtration in capillary tissue fluid exchange system, *International Journal of Latest Technology in Engineering, Management and Applied Science*, Vol. No.4, 2278 -2540(2015).
27. Bali, Rekha, Mishra, Swati, Tandon, P.N., Three layer model for blood flow in small blood vessels, *e-Journal*

- of Science & Technology, Vol.No.11 (1), 121- 130,(2016).
28. Bali, Rekha, Mishra, Swati, Tandon, P.N., Study of Anomalous behavior of Blood Flow in capillary surrounded by tissue, International Journal of Mathematics And its Application, Vol.No.4, 1(B), 121-131, (2016).
 29. Bali, Rekha, Gupta, Mishra, Swati, Study of Transport of Nanoparticles with Power law fluid model for blood Rheology in Capillaries, Journal of Progressive Research in Mathematics, Vol.No.7(3) 1053-1062(2016).
 30. Bali, Rekha, Gupta, Nivedita, Mishra, Swati, Dispersion characteristics of non-Newtonian fluid during transportation of nanoparticles in permeable capillary, Applications and Applied Mathematics: An International Journal, Vol. 11(2), 632-645 (2016).
 31. Bali, Rekha, Gupta, Nivedita, Mishra, Swati, Numerical solution of Ellis fluid model in stenosed arteries, International Journal of Mathematical Archive, Vol. 8(6), 218-226, (2017)
 32. Bali, Rekha, Gupta, Nivedita, An Study of non-Newtonian fluid by K-L model through a non-symmetrical stenosed narrow artery, Applied Mathematics and computation (Elsevier), Vol.320, 358-370, 2018
 33. Bali Rekha, Gupta Nivedita, Study of Transport of Nanoparticles with K-L Model Through a Stenosed Microvessels, Application and Applied Mathematics: An International Journal, Vol.13, Issue 2 (December 2018), pp, 1157-1170.
 34. Bali Rekha, Prasad Bhawini, Mishra Swati. A Review On Mathematical Models For Nanoparticle Delivery In The Blood. International Journal Of Advanced Research, (2022) 10(04), 130-146 ISSN:2320-5407 DOI:10.21474/IJAR01/1456
 35. Sameh S Ahmed, Rekha Bali, Hasim Khan, Hassan Ibrahim Mohamed, Sunil Kumar Sharma. Improved Water Resource Management Framework for Water Sustainability and Security. (2021) Environment Research. Vol. 201 pp 111527.
 36. Rekha Bali, Sunil Kumar Sharma, Dinesh Kumar, Sameh S Ahmed. Empirical Research on Sustainable Developmental Goal and Priorities for Water Sustainability in Saudi Arabia. (2021) Annals of Operation Research. pp 1-18.
 37. Bali Rekha, Prasad Bhawini, Mishra Swati. On The Thermodynamic Properties and Flow Of Different Shapes Of Nanoparticles In A Catheterized Composite Artery. (2022) International Journal Of Trend In Scientific Research And Development. Volume 6, Issue 4, pp - 653-664 URL:www.itjsrd.com/papers/itjsrd50519.pdf
 38. Bali Rekha, Mishra Swati, Gupta Nivedita, Prasad Bhawini. Mathematical Model of Concentration Dependent Viscosity For The Effect Of RBC On The Transport Of Nanoparticles. (2022) International Journal Of Innovative Research. Volume 11, Issue 6, e-ISSN:2319-8753, p-:2320-6710, DOI:[10.15680/IJRSET,2022.1106127](https://doi.org/10.15680/IJRSET,2022.1106127)
 39. Bali Rekha, Prasad Bhawini, Mishra Swati. Study Of Effect of Different Shapes of Nanoparticles In Three-Layer Model For Blood Flow In Arterioles. (2022) Contemporary Mathematics. Volume 3, Issue 3, pp- 270-287 DOI:[10.37256/cm.3320221537](https://doi.org/10.37256/cm.3320221537)
 40. Bali Rekha, Prasad Bhawini. Study Of Effect of Various Shapes Of Nanoparticles In Catheterized Artery With Elliptical Stenosis: Comparing Analytical And Numerical Solution. (2023) GANITA, Vol 72, Issue 2,

pp: -127-151 <http://bharataganitaparisad.com/ganita-volume-722/>

41. Bali Rekha, Prasad Bhawini. Study of Nanoparticle Dispersion In Capillaries Using Power law Nanofluid Model. (2023) International Journal of Engineering Technology and Management Sciences. Vol 7, Issue 2, ISSN:2581-4621 DOI:[10.46647/ijetms.2023.v07i02.052](https://doi.org/10.46647/ijetms.2023.v07i02.052)
42. Bali Rekha, Prasad Bhawini. Study of Nanoparticle Diffusion In Capillary-Tissue Exchange System Using Jeffrey Nanofluid Model: Effects Of Shapes Of Nanoparticles. (2023) CFD Letters 15, Issue 6, ISSN: 2180-1363 DOI:[10.37934/cfdl.15.6.130153](https://doi.org/10.37934/cfdl.15.6.130153)
43. Prasad Bhawini, Bali Rekha. Mathematical Study of Nanoparticle Loaded In RBC For Drug Delivery In An Artery With Stenosis. (2023) Physics of Fluids, Vol 35, Issue 9, ISSN: 1089-7666 DOI:[10.1063/5.0167245](https://doi.org/10.1063/5.0167245)
44. Prasad Bhawini, Bali Rekha. Mathematical Study Of Nanocomposites For drug Delivery In Capillary. (2023). R P Materials: Proceedings, International Conference On Recent Trends In Materials Science & Devices. 02(01), 1-10, e-ISSN: 2583-8342
45. Bali Rekha, Prasad Bhawini. Study Of Varying Concentration And Size Of Nanoparticles In A Catheterized Artery With Clot And Stenosis. (2024) Jnanabha. 53(02), 44-56 DOI: [10.58250/jnanabha.2023.53205](https://doi.org/10.58250/jnanabha.2023.53205)
46. Sunil Kumar Sharma, Waseem Ahmad Khan, Manoj Kumar, Rekha Bali. Estimation and Concealment Deep Fake Detection in Images Using Hybrid LSTM. (2024) International Journal of Intelligent Systems and Applications in Engineering. Vol. 12(2) pp. 505-522.
47. Bali, R., Tripathi, R., Mishra, S. (2024). A Numerical Study of a Three-Layered Model for the Flow of Jeffrey Fluid in Small Blood Vessels. In: Singh, J., Anastassiou, G.A., Baleanu, D., Kumar, D. (eds) Advances in Mathematical Modelling, Applied Analysis and Computation. ICMMAAC 2023. Lecture Notes in Networks and Systems, vol 953. Springer, Cham. https://doi.org/10.1007/978-3-031-56304-1_12
48. Bali, R., Tripathi, R., Mishra, S. (2024). Mathematical modelling of tissue porosity effect and non-Newtonian behavior of blood on anomalous effect on blood flow in micro-blood vessels. Physics of Fluids, Vol 36, Issue 11, DOI:[10.1063/5.0228337](https://doi.org/10.1063/5.0228337)
49. Bali, R., Tripathi, R., Mishra, S. (2025). Mathematical Study of Blood Flow in Small Vessels: Considering Red Blood Cell Deformation. M. Sahni et al. (eds.), Mathematical Modeling, Computational Intelligence Techniques and Renewable Energy, Lecture Notes in Networks and Systems 1192, Springer Nature Singapore Pt. Ltd. https://doi.org/10.1007/978-981-96-1449-3_29
50. Bali, R., Bajpai, P., (2025). Numerical study of tibial inserts made of conventional and vitamin E blended UHMPE with and without cross linking in total knee replacement under EHL conditions. Computer Methods in Biomechanics and Biomedical Engineering, pp.1-13. <https://doi.org/10.1080/10255842.2025.26110678>

b)Publications in Proceedings of Conferences / Seminars / Symposium

S. No.	Title of the paper presented	Title of conference /Seminar	Organized by/ Held at	Whether international / National	Presented /Attended	Co- Authors
1.	A new model for gel formation on Cartilagenous surfaces in normal and pathological States	National Conference of Fluid Mechanics and fluid power	Srinagar (1987)	National	Presented /attended	P.N. Tandon
2.	Role of synovial fluid in the functioning of knee joint	2 nd international conference on physiological fluid Dynamics	Madras (1987)	International		P.N.Tandon
3.	Micro structural and peripheral layer viscosity effects and pulsatile blood flow in complaint tubes	National conference of Fluid Mech. And fluid power	Srinagar (1987)	National	Presented/ Attended	P.N. Tandon, J. Prakash, J.K. Mishra
4.	A study of diffusion phenomenon in modelled Normal and Stenotic capillary Tissue exchange system.	International conference of computational methods in flow Analysis	Japan (1988)	International	Presented/ Attended	P.N.Tandon
5	A Mathematical model of particle deposition in modeled bronchial tube	International conference of Mathematical modeling in science & Technology	Madras (1988)	International		P.N. Tandon
6.	A Model for the articulation of Ankle Joint	National Conference of Biomechanics	New Delhi (1988)	National	Presented/ attended	P.N.Tandon
7	Rheological Study of laminar turbulent transition in blood flows	National conference of Fluid mechanics and fluid power	Kanpur	National	Presented/ attended	P.N.Tandon
8.	Analysis of coupled heat and vapour transport mechanism in a modeled bronchial tube	42 nd Annual meeting of Indian Institute of Chemical Engineers	Vadodara (1988)	National		P.N.Tandon et.al.
9	A model of Ankle joint	Proceeding of conference on	Brunei (1995)	International	Presented/ attended	

		Mathematical Modelling				
10.	A Biphasic Model of Articular Cartilage in reference to humn joints	Proceeding of Internat conference on Mathematical Modelling	Brunei (1995)	International	Presented/ attended	
11	A study of temperature Regulation in synovial joint	9 th International symposium on Transport phenomena	Singapore	International	Presented/ attended	P.N.Tandon
12.	A Model for lubrication of knee joint	Conference on Advances in Biomechanics	Bhopal	International	Presented/ attended	P.N.Tandon
13	A Mathematical Model for Ankle Joint	Proc. Of Int. Conf. on Mathematical Modelling of Linear Systems	Kharagpur	National		P.N.Tandon & Amita Chaurasia

G. Paper presented in Conference

S.no.	Title of paper	Title of conference	Dates of event	Organised by	National/ International
1.	Mathematical Modelling the Role of Nanoparticles in Diffusive and Filtration Processes within Capillary – Tissue Exchange	8 th International conference on Mathematical Modelling, Applied Analysis and Computation-2025	01.08.2025-03.08.2025	JECRC University, Jaipur in association with IIT Mandi, Lebanese American University ,Lebnon	International
2.	Mathematical Modelling of Fluid Filtration / Reabsorption, and Diffusion in a Capillary Tissue Exchange System with Effect of Tissue Porosity	National Conference On Data Predictive Analysis & Numerical Simulations	23.4.2025-25.4,2025	IIT(ISM) Dhanbaad	National
3.	Effect of transport of nanoparticles on diffusive flux and filtration efficiency in capillary-tissue exchange system:A Mathematical Model	39 th Annual conference of Ramanujan Mathematical Society	27.12.2024-29.12.2024	Christ University, Bengluru	National
4.	Flow of a Nano Fluid in a Stenotic Artery with effect of Thermal Radiation :A Caputo Fabrizio Fractional order model	4 th International conference on MMCITRE 2024	29.5.2024-31.5.2024	Manipal University, Jaipur	International
5.	Mathematical Modelling of Blood Flow in Small blood	6 th International Conference on	21.12.2023-22.12.2023	BITS Pilani,	International

	vessels with deformation of Red Blood Cells : Implications and Hemodynamics	FIAM 2023		Dubai	
6.	Mathematical Model for the effect of RBC on the Transport of nanoparticles	3 rd International Conference on Mathematical Techniques and Applications	23.3.2022-25.3.2022	SRM institute of science and Technology, Tamilnadu	International
7.	On the Flow of Different Shapes of Nanoparticles in a Catheterized Arteries	National Conference of academy for Progress of Mathematics	07.5.2022-08.5.2022	BHU, Varanasi	National
8.	An axial train model for the small blood vessels	National seminar on Recent Trends in Mathematics & its Applications	12.2.2011	BND College, Kanpur	National
9.	Mathematical Study for --- Capillary Tissue for Exchange System	11 th International Conference of the International Academy of Physical Sciences	20.02.2010-22.02.2010	University of Allahabad, Allahabad	International
10.	Study of Anomalous Behaviour of Blood Flow in Capillary Surrounded by Tissue	National Conference on Biomechanics	7.3.2009-8.3.2009	IIT Roorkee	National
11	Biphasic study of synovial joint	Seventh Annual Conference of Vijnana Parishad of India	24.10.1997-26.10.1997	HBTI, Kanpur	National
12	A study of temperature Regulation in synovial joint	9 th International Symposium on Transport Phenomena	25.06.1996-28-06.1996	National University of Singapore	International
13	A model of Ankle joint	International Conference of Mathematical Modelling	29.5.1995-29.5.1995	Brunei University, Brunei	International
14	Biphasic study of synovial joint	Seventh Annual Conference of Vijnana Parishad of India	7.9.1993	HBTI, Kanpur	International

H. Chapters Published in Edited Books

Sl. No	Title of the Chapter	Title of the Edited Book	ISBN No.	Publisher	Year
1.	Rheological study of laminar-turbulent transition in drag reducing polymeric solution	Encyclopedia of fluid mechanics		Gulf publishers U.S.A	1987 Chapter 15 pp.59-477

I. Invited Lectures and Chairmanships at National or International Conference

S.NO.	Name of conference / seminar etc.	Organized by	Period		Invited Lecture / Chairman of Technical Sessions
			From	To	
1..	Short Term Training Programme for teachers of polytechnics	R.D & TI	April.29, 2002	May.2, 2002	Invited Lecture
2.	Refresher course on” Applied Mathematical Techniques for Chemical Science”	Networking cell , TEQIP, World Bank Project , HBTI Kanpur	April.11, 2007	April.15, 2007	Invited Lecture
3.	Workshop on “ Role of Mathematics in Science and Technology	Mathematics Department HBTI, Kanpur	Oct. 24, 2007	Oct. 24, 2007	Invited Lecture
4.	Short Term Training Programme for Staff of Polytechnic	Institute of Research Development & Training, Kanpur	Dec. 17, 2007	Dec. 20, 2007	Invited Lecture
5.	Wokshop on “ modeling and simulation of chemical process”	Deptt of Chemical Engg HBTI, Kanpur	Feb. 24, 2009	Feb. 28, 2009	Invited Lecture
6.	Optimization Techniques for Engineers	Deptt of Chemical Engineering HBTI, Kanpur	March. 23, 2009	March. 28, 2009	Invited Lecture
7.	Seminar on mathematics & its application to industries	DBS (PG) Kanpur	Jan.1, 2009	Feb. 2, 2009	Invited Lecture

8.	Mathematics Day Celebration	Deptt of Mathematics Dr. B.R. Ambedhkar University IBS, Khandari Agra	Dec. 22, 2009	Dec. 22, 2009	Invited Lecture & Chairperson
9.	Mathematical Modeling and System Simulation	Deptt of Mathematics HBTI, Kanpur	Feb 20, 2010	Mar.31, 2010	Invited Lecture
10.	Memorial weekend lecture series on “ Modeling and Computing “	Deptt of Mathematics HBTI, Kanpur	Feb.18, 2012	Mar. 18, 2012	Invited Lecture
11.	Five days Sir Ramanujan Memorial workshop / Lecture Series	Deptt of Mathematics DAV college, Kanpur	Dec. 18, 2012	Dec.22, 2012	Invited Lecture & Chairperson
12.	Modelling & Simulation in Biomechanics in All India Seminar RTFIT 2012	The Institution of Engineers (India) Kanpur Losal chapter U.P State centre Lucknow & CSE Deptt ,HBTI, Kanpur	2012	2012	Invited Lecture
13.	Numerical Techniques: Advantages and Applications	Academic staff college Lucknow	Jan. 02, 2019	Jan. 22, 2019	Invited Lecture
14.	Two lectures on the topic – ‘ Application of Numerical Techniques’	Department of mathematics University of Allahabad, Prayagraj	12.10.2019	12.10.2019	Invited Lecture
15.	‘ Importance of Numerical Techniques in Applied Sciences’ as a guest speaker	Department of mathematics,DAV College,Kanpur	9.12.2019	9.12.2019	Invited Lecture
16.	Importance of Numerical Techniques in Applied Sciences	Faculty of Science, Department of Mathematics “Annamalai University”	3 rd June, 2020	4 th June, 2020	Invited Lecture
17.	Refresher course on Mathematics and its Application	Department of Mathematics, University of Allahabad, Prayagraj	12 th Nov, 2022	12 th Nov, 2022	Invited Lecture

18.	National Mathematics Day	B.N.D.P.G. College, Kanpur	22.12.2022	22.12.2022	Invited Lecture
19.	Delivered lecture on "Probability" in Enrichment workshop	Central School Kanpur Cantt. Under Ministry of Education Govt. of India	28.07.2023	28.07.2023	Invited Lecture
20.	National Seminar on "Mathematical Modelling and its Applications"	Department of Mathematics, DAV(PG) college, Kanpur	18.03.2024	19.03.2024	Invited Lecture
21.	Chair the session on the Vedic Mathematics	Vedic Ganit National Workshop	23.08.2024	25.08.2024	Invited Lecture
22.	Delivered Lecture as Chief Guest in Workshop on "Blending Innovative Pedagogies with Mathematical Teaching"	Workshop on "Blending Innovative Pedagogies with Mathematical Teaching"	27.05.2025	28.05.2025	Invited Lecture
23.	The Girl I am, the change I lead: Girls on the Frontiers of Crisis	International Day of the Girl Child	11.10.2025	11.10.2025	I Special Lecture
24.	Maathematical Modelling of Capillary Tissue Exchange	Interntionaal conference on "Recent advances in Mathematics, Mathematical Modelling aand Banach Fixed Point Theory" organised by DAV Kanpur	13.12.2025	14.12.2025	Invited Lecture
25.	Real World Interpretations of Continuity and Differentiability and Analysis of the behavior of Functions Graphically	A Special Lecture Session organised by IGNOU, Regional Centre, Jorhat ,Assam	22.12.2025	22.12.2025	Iiin Invited Lecture Special Lecture
26.	National Mathematics Day	Lecture organised by PPN College Kanpur	22.12.2025	22.12.2025	Invited Lecture

J. Details of participation in Refresher courses / Teaching-learning-evaluation technology programs / Soft skills development programs /Webinar/ Faculty development programs etc.

S.No	Name of the Course	Name of the organization	Period		Sponsoring Authority
			From	To	
1.	Two weekshort term course on “Reliability and safety in process “	HBTI Kanpur	28.09.98	10.10.98	AICTE – ISTE
2.	Refresher course on sobolev spaces and its Applications	IIT Kanpur	03.12.98	20.12.98	IIT Kanpur
3.	Workshop on “ Consesus learning process”	BBDNITM. Lucknow	09.06.02	09.06.02	UPTU, Lucknow
4.	Engineering Shbdavali Karyashala	Govt. of India (Commission for Scientific and Technical Terminology) (MHRD)	25-26 June- 03	26 June- 03	NSI, Kanpur
5.	SAM Workshop on “ Capicity building of Women Managers in Higher Education”	Continuing Education Centre, IIT, Roorkee	18 May-09	22 May-09	IIT,Roorkee
6.	STTP on “ Intellectual Property Rights and Patent information”	HBTI, Kanpur	27.09.04	01.10.04	NITTTR (MHRD) CHANDIGARH
7. 8..	One week FDP on “ Advances in Engineering Materials”	HBTI, Kanpur	16.03.09	21.03.09	TEQIP World Bank Project
9.	STTP on “ Optimization Techniques for Engineers”	HBTI, Kanpur	23.03.09	28.03.09	ISTE-AICTE
10.	One Day Workshop on “ Data Analysis Using SPSS”	STEP-HBTI, Kanpur	11.12.10		STEP-HBTI, Kanpur
11.	FDP on “ Essentials of Teaching learning process”	HBTI, Kanpur	18.03.13	23.03.13	TEQIP World Bank Project (Phase-II)
12.	One week FDP on "Modeling , Simulation and Analysis of Engineering Systems"	HBTI Kanpur	25.10.13	30.10.13	TEQIP World Bank Project (Phase-II)

13.	One week short term course on "Curriculum Development and	HBTI Kanpur	01.05. 13	06 July-13	TEQIP World Bank
14.	Evaluation Methods in Technical Education" FDP on "Engineering	HBTI Kanpur	01.05. 13	06 July-13	Project (Phase-II) TEQIP
15.	Education: Opportunities , Challenges & Future Directions		07.03.14	12.03.14	World Bank Project (Phase-II)
16.	FDP on Recent Advances in Chemical Engineering	Department of Chemical Engineering	23.07.18	27.07.18	HBTU,Kanpur
17.	FDP on Methods and Techniques for Enhanced Teaching and Learning in Technical Education.	Department of Chemical Engineering	15.10.18	20.10.18	HBTU,Kanpur
18.	Training need analysis of faculty Members	TEQIP- III	22.01.19	22.01.19	HBTU, Kanpur
19.	STC on "Numerical Methods and Applied Statistics"	Department of Applied Sciences, NITTTR, Chandigarh	23.09.19	27.09.19	NITTTR, Chandigarh
20.	Workshop on Prevention OF Sexual Harassment of Women at Workplace	Organised by NAHRD	14.10.19	15.10.19	NAHRD New Delhi
21.	Participated in one day workshop on 'Gender's Sensitization and Women Empowerment' & 'Problem Based and Project based learning'	Organised by SPIU	22.02.20	22.02.20	SPIU

22.	Attended Expert Training Programme at AICTE, New Delhi	Organized by AICTE	27.02.20	27.02.20	AICTE
23.	Attended Consultation workshop on Pavitra Ganga Project	Organized by the Energy and Resources Institute (TERI)	06.03.20	06.03.20	Energy and Resources Institute (TERI)
24.	SWAYAM Course on “ Digital Transformation in Teaching Learning Process”	NPIU(TEQIP-III), IIT Bombay	06.04.20	22.04.20	NPIU(TEQIP-III), IIT Bombay
25.	Participated in FDP on “ Advancement in Science and Humanities”	Department of Science and Humanities, PANIMALAR, Institute	25.05.20	29.05.20	Department of Science and Humanities, PANIMALAR
26.	Participated in Online Workshop on “Interactive Teaching and Experimental Learning using MATLAB and SIMULINK”	SPIU, UTTAR PRADEH	13.05.2020	13.05.20	SPIU, UTTAR PRADEH
27.	Participated in WEBINAR on “Virtual Teaching Learning With Google Classrooms, Google Meet & you tube	Organized by BIET Jhansi in Association With SPIU (U.P.)	18.05.20	18.05.20	BIET Jhansi in Association With SPIU (U.P.)
28.	National Webinar on “Effects of use of mobile phones and towers on Human life”	ET deptt. HBTU, Kanpur & GWEC, Ajmer	24.05.20	25.05.20	HBTU, Kanpur and GWEC, Ajmer
29.	One week FDP “Fostering global competition among faculty during Covid-19”	Internal quality assurance cell of Amar Saheed Baba Ajit Singh Memorial College, Punjab	06.07.20	10.07.20	Bela Rupnagar, Punjab
30.	National Webinar on “ Unlocking the Lockdown Through E – Examination	IET Ayodhya and SPIU(U.P)	20.05.20	20.05.20	IET Ayodhya and SPIU(U.P)
31.	Webinar On “Microsoft Digital Transformation”	CSE, HBTU Kanpur	12.05.20	12.05.20	CSE, HBTU Kanpur

32.	WIE week celebration webinar on “Find the answers: If you cannot, change the questions”	IEEE Madras YPAG, IEEE Madras WIE AG & IEEE PES Madras Chapter	10.07.20	10.07.20	IEEE, Madras
33.	National Webinar on “EMERGING WIRELESS TECHNOLOGIES: Future Trends Of Multiple Access Schemes”	HBTU, Kanpur and NIT Kurushetra	29.05.20	30.05.20	HBTU, Kanpur and NIT Kurushetra
34.	One week FDP on “ICT learning and E content development”	Internal quality assurance cell and placement & soft skills development cell in association	20.07.20	20.07.20	IQACP & SSDC in association with Indira Gandhi National Open University
35.	Participated in the Webinar on “Introduction to MATLAB Programming”	Electronics Engineering Department, HBTU Kanpur	18.05.20	23.05.20	Electronics Engineering Department, HBTU Kanpur
36.	Webinar On “ MATLAB for AI, Machine Learning and Deep Learning	Jointly organized with CSE and ET Departments, HBTU, Kanpur	30.05.20	30.05.20	CSE and ET Departments, HBTU, Kanpur
37.	Virtually participated in 2020 International Workshop on “Education 4.0: Transformation of Learning Environment”	Rajkiya Engineering College Banda with Consillo Intelligence	29.05.20	30.05.20	REC Banda with Consillo Intelligence Research Lab, Noida
38.	Modeling and Simulation” in the memory of Shrinivas Ramanujan on 22 Dec. 2020	Departments of Mathematics, HBTU, Kanpur	22.12.20	22.12.20	Departments of Mathematics, HBTU, Kanpur
39.	Professional Development Training Programme	IIM Kozhikode	11.01.21	15.01.21	IIM Kozhikode
40.	Webinar on “Life Beyond Studies”	BIET Jhansi SPIV-UP and super 77, under knowledge transfer series	13.06.21	13.06.21	BIET Jhansi SPIV-UP and super 77
41.	National webinar on “Anvarat Samvad”	Noesis Thinctech Search and Research Society	13.06.21	13.06.21	Noesis Thinctech Search and Research Society
42.	One week FDP on “Advanced Data Analysis using SPSS and ANOVA” (Hybrid mode)	Department of Statistics, University of Lucknow	30.10.2023	04.11.2023	HBTI Kanpur

43.	One week FDP on “Multivariate Data Analysis using SPSS”	Department of Statistics, Lucknow	02.12.2024	07.12.2024	HBTI, Kanpur
44.	Two days International workshop on “Nonlinear Analysis and Mathematical Applications”	SITAM			SITAM
45.	National Workshop on “Vedic Mathematics-Advanced Level”	Sir Padampat Singhania Education Centre , Kanpur	26.06.2024	27.06.2024	SPEC, Centre,Kanpur
46.	Vedic Ganit National Workshop	IIT Dumna, Jabalpur	23.8.2024	25.8.2024	HBTI,Kanpur
47.	Workshop on “Blending Innovative Pedagogies with Mathematical Teaching” As a Chief guest	Shri Hari Govind Singhania Centre for Advanced Learning in Collaboration with CSJM, University and Shiksha Sanskriti Utthan Nyas	27.5.2025	27.5.2025	Shri Hari Govind Singhania Centre for Advanced Learning in Collaboration with CSJM, University and Shiksha Sanskriti Utthan Nyas

K. Organizing Seminars/ Conferences/ Workshops /Refresher Courses /Training Programs /Faculty Development Programs etc.

S.NO.	Name of the Program	Organizing Institution/ Department/ Body	Period		Sponsoring Authority	Name of the Co-Organizer (If any)
1.	Conference on “ Recent trends in Mathematics and Applications	Mathematics Department HBTI, Kanpur	Sep. 9, 1993	Sep. 9, 1993	HBTI Kanpur	Member
2.	Seventh Annual conference of Vijnana Parisad of India	HBTI Kanpur	Oct. 24, 1997	Oct. 26, 1997	HBTI Kanpur	Member
3.	Seminar to Commemorate the 78 th Birthday of Prof. Harish Chandra	HBTI Kanpur	Oct. 11, 2000	Oct. 11, 2000	HBTI Kanpur	As Assistant Organising Secretary
4.	World Mathematical Year	HBTI Kanpur	Dec. 31, 2000	Dec. 31, 2000	HBTI Kanpur	As Assistant Organising Secretary
5.	Application of Mathematics in Engineering & Technology	HBTI Kanpur	Sept 8, 2007	Sept 8, 2007	Networking Cell, TEQIPN World Bank Project, HBTI ,Kanpur	Deputy Coordinator, Organising Committee
6.	Role of Mathematics in Science & Technology	HBTI Kanpur	24.10.2007	24.10.2007	Economy & community Cell, World Bank Project, HBTI Kanpur	Deputy Coordinator, Organising Committee
7.	Mathematical Validation of Pranayam	Collaboration of Yoga Club at HBTI, Kanpur	Nov 21, 2007	Nov 21, 2007	Economy & community Cell, WorldBank Project, HBTI ,Kanpurr	As HOD Mathematics
8.	30 hours Prof. P.N. Tandon Memorial Weekends Lecture series on Modelling and Computing	HBTI , Kanpur	Feb. 18 2012	March. 18 2012	HBTI , Kanpur	Organizing Secretary

9.	Faculty Development Program on Mathematical Modeling and Research Methodology	Department of Mathematics School of Basic and Applied Sciences HBTU Kanpur (Sponsored by TEQIP-III)	08.10.18	12.10.18	HBTU, Kanpur	Coordinator
10.	One week short term training programme on “Data Analysis and SPSS Software”	Department of Mathematics School of Basic and Applied Sciences HBTU Kanpur (Sponsored by TEQIP-III)	21.10.19	25.10.19	HBTU, Kanpur	Convener
11.	On Webinar on “Carrier Opportunities after B.Tech.”	Dept. of Mathematics, HBTU Kanpur	27.07.21	27.07.21	HBTU, Kanpur	Convener
12.	Webinar on “Applications of Mathematical Modelling in Sciences, Engineering and Technology”	Dept. of Mathematics, HBTU Kanpur	09.10.21	09.10.21	HBTU, Kanpur	Convener
13.	Workshop on “Python Programming for Data Science”	Dept. of Mathematics, HBTU Kanpur	20.10.21	20.10.21	HBTU Kanpur	Convener
14.	STTP on “Data Analysis with Python Libraries”	Dept. of Mathematics, HBTU	25.10.21	26.10.21	HBTU, Kanpur	Convener
15.	STTP on “Data Analysis with Python Libraries”	Dept. of Mathematics, HBTU Kanpur	29.10.21	30.10.21	HBTU, Kanpur	Convener

16.	R Programming for Statistical Analysis	Dept. of Mathematics, HBTU Kanpur	08.10.2021	10.10.2021	HBTU Kanpur	Convener
17.	The contribution of Srinivasan Ramanujan to Mathematics	Dept. of Mathematics, HBTU Kanpur	22.12.2021	22.12.2021	HBTU Kanpur	Co-chairman
18.	On Theoretical Study of Diabetic Retinopathy and Complications	Dept. of Mathematics, HBTU Kanpur	20.11.2021	20.11.2021	HBTU Kanpur	Convener Convener
19.	Gender sensitization & Prevention of Sexual Harassment at workplace	Dept. of Mathematics, HBTU Kanpur	12.11.2021	12.11.2021	HBTU Kanpur	Convener
20.	On Theoretical Study of Diabetic Retinopathy and Complications	Dept. of Mathematics, HBTU Kanpur	20.11.2021	20.11.2021	HBTU Kanpur	Convener
21.	Gender sensitization & Prevention of Sexual Harassment at workplace	Dept. of Mathematics, HBTU Kanpur	12.11.2021	12.11.2021	HBTU Kanpur	Convener
22.	Data Driven Infectious Disease Modelling for Public Health	Dept. of Mathematics, HBTU Kanpur	16.11.2021	16.11.2021	HBTU Kanpur	Convener
23.	Research Methodology and Quantitative Techniques	Department of Mathematics	13.10. 2022	19.110.2022	HBTU, Kanpur	Convener
24.	One day National Workshop On “Basic Concepts in Scientific Writing in Latex”	Department of Mathematics	11.6.2024	11.6.2024	HBTU, Kanpur	Convener
25.	Two day workshop on ‘Mathematical and Statistical Methods in Engineering, Science and Management’	Department of Mathematics	07.07.2025	08.07.2025	HBTU, Kanpur	Convener

26.	International Conference on Frontier Of Pure and Applied Mathematics	Department of Mathematics	06.11.2025	07.11.2025	HBTU, Kanpur	Convener
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L. Membership of Scientific / Professional Bodies:

Sl. No.	Name of Scientific /Professional Body	Type of present Membership	Position held, if any
1.	Indian society of biomechanics	Life membership	Life Member
2.	Harcourtian Alumni Association	Life membership	Life Member
3.	Bharat Ganita Parisad	Life Membership	Life Member
4.	Forum for Industrial and Applied Mathematics	Life Membership	Life Member

M. Administrative duties performed in the Institute:

- 1) Dean, School of Humanities and Social Sciences, HBTU, Kanpur from 13.11.2022 for two years.
- 2) Dean, School of Basic and Applied Sciences, HBTU Kanpur from 1/11/2018 to 31/10/2020.
- 3) Head, Mathematics Department, HBTU Kanpur from 3/4/2018 to 3.4.2021.
- 4) Head, Mathematics Department, HBTI, Kanpur from 23/03/06 to 23/03/09.
- 5) Head, Chemistry Department, HBTU, Kanpur from 1.11.2018 to 31.10.2020.
- 6) Head, Humanities Department ,HBTU, Kanpur from time to time from 13.11.2022 to 14.11.2024
- 7) Incharge, Mathematics Department, HBTU, Kanpur from 11.7 2001 to 3.2 2003.
- 8) Presiding officer of Committee based on Vishakha Guidelines (The Sexual Harassment of Women at Workplace Act 2013) from 26/11/2018 for three years.
- 9) Chairman, Board of Studies, Mathematics Department, HBTU, Kanpur from 1/11/2018 to 31.10.2020.
- 10) Grievance Redressal Officer, HBTU Kanpur from 15/07/2018 for three years.
- 11) Member Academic Council from 1.11.2018 to 31.10.2020. and 13.11.2022 to 14.11.2024
- 12) Member Admission Committee, HBTU Kanpur from 1/11/2018 to 31/10/2020.
- 13) Member, Board of Examination, HBTU Kanpur from 31.01.2019 for three years.
- 14) Assistant Superintendent in even semester examination (2008-2009) of HBTI, Kanpur and Ist & IInd midterm test of session 2008-2009 (II sem.).
- 15) Assistant Superintendent in SEE-2008-2009 & in even semester examination-UPTU 2007-08.
- 16) Convener and Member of Selection committee of Guest Lecturers in Mathematics.
- 17) Member of Duly Approved department level (DAIP) Committee for Mathematics and Chemistry

Department, HBTU Kanpur from Dec 11, 2018 for two years.

- 18) Co.Convener, Shikayat Nivaran Samiti , HBTU Kanpur from 07/07/2017 for three years.
- 19) Worked as Flying Squad in UPSEE- 2013, GBTU at Kanpur.
- 20) Leader Flying Squad, HBTU Kanpur Even semester Examination, 2019.
- 21) Member of Various Committees in reference to NBA Accreditation, HBTU Kanpur from 25/03/2019.
- 22) ACS/DCS in Even Semester Exam of MTU Noida at HBTI Kanpur from 23.05.13 to 07.06.13.
- 23) As Observer in UPSEE Counseling from 08.07.13 to 16.07.13.
- 24) As a Centre Controller for conduction of UPSEE 2012.
- 25) Centre controller in UPSEAT 2005, SEE-2006.
- 26) Worked in Online Counseling of SEE-2006, 2007, 2008 & 2010.
- 27) Member of committee to prepare pariniyam for student Aid fund and Miscellaneous expenditure on unspecified expenditure., HBTU, Kanpur
- 28) Member of Anti ragging committee.
- 29) Member in the team of “Women’s grievances redressal cell” .
- 30) Member of Time Table committee.
- 31) Convener and Member of Departmental purchase committee.
- 32) Member of Stock verification committee.
- 33) Member of committee to select candidates for Ph.D. course in different disciplines in institute and to conduct entrance formalities.
- 34) Convener and Member of Selection committee of Guest Lecturers in Mathematics.
- 35) Member, Draft Committee for Convocation 2020 held on Dec 7,2020, HBTU, Kanpur.
- 36) Dy. Coordinator, Induction Program for new entrants from July 31 to August 18, 2018 and member, Induction Program 2019-20.
- 37) Member of Invitation and Reception committee in Convocation 2010, 2020
- 38) Member ,Selection Committee for Ph.D. Students July 17, 2018, 2019 ,2020 HBTU, Kanpur
- 39) Chairperson, Faculty development program on “ Recent Trends in Condensed matter Physics” organized by Department of Physics, HBTU, Kanpur from 29th November- 1st December ,2018.
- 40) Member, “ADHYAY -2018”.
- 41) Conducted Self-defense training in Girls Hostels.
- 42) Member Inter Hostel Cultural and Sports Activity and Fresher’ s Funcion ,2018
- 43) Member, “ UHTAAN a Start up Nirman” on 16.11.2018
- 44) Chairperson Faculty development programme on “Matrial Synthesis and Advanced Characterization Techniques “ under Teqip 3, from December 01-04, 2018 organised by Department of Chemistry , HBTU, Kanpur.
- 45) Member Reception Committee, Workshop On State level Faculty Interaction Seminar under the aegis od Department Level Faculty Interaction Seminar under the aegis of Department of Technical Education , Govt of U.P. ,June 8-9, 2015 , HBTI, Kanpur.

- 46) Member of Anti-ragging Committee.
- 47) Member of organizing Committees in Annual Athletic Meet organized by Sports of Sub Council under Council of Student's Activities HBTI Kanpur.
- 48) Worked as Presiding officer in Election of student secretaries for different sub council/clubs of the council of student Activities.
- 49) As a judge at the event in odyssey 2007.
- 50) Member of Various Displine committees.
- 51) Warden Girl Hostels
- 52) Subject Expert , Board of studies , Department of applied Sciences , KNIT, Sultanpur.
- 53) Nominated and worked as Single point of contact (SPOC) for establishment of digital board /classrooms in University (HBTU, KANPUR) under aegis of TEQIP-3.
- 54) Subject expert , Syllabys modification Committee for Applied Mathematics in polytechniques, IRDT ,Kanpur.
- 55) Expert Member Selection Committee (Mathematics), KIT, Kanpur.