Curriculum Vitae

Dr. Amit Kumar Verma
Ph.D. IIT KGP
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Address:
Dr. Amit Kumar Verma
Associate Professor,
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Educational Qualification: Ph.D.
Department of Mathematics, Indian Institute of Technology, Kharagpur, India, Ph.D. 24th February 2009. (Title of the Thesis: Analytical Results for a Class of Nonlinear Singular Boundary Value Problems)

Additional Responsibilities:

- Associate Warden (1st April 2016 to 18th April 2017)
- PIC Classroom and Time Table (April 2017 to April 2019)
- DAPC Secretary (25th April 2018 till 24th April 2020)
- PIC RSD 2019, 2021
- Seminar Coordinator (2018-2022)
- Social Media Coordinator Institute Innovation Committee (Since November 2021)
- Senate Member IIT Patna 8 March 2022 - Nov 2022.
- PIC - Central Exam Time Table and Classroom (August 2022 till date)

Fellowships:
1) State Level Integrated Scholarship throughout High School studies.
2) National Merit Scholarship from High School onwards till bachelor's degree.
3) UGC-CSIR NET JRF (CSIR)
5) NBHM Postdoctoral fellowship February 2009.

IIT PAL Video Lectures: Recorded 7 Video Lectures on Definite Integral at IIT Delhi Recording Room in 2017. These lectures are freely available on YOUTUBE and are being telecasted regularly on the SWYAM Channel of DTH.

Courses Taught at IIT Patna:

1. MA001: Preparatory Mathematics
2. MA101: Mathematics I (Advanced Calculus)*
3. MA215: Real Analysis
4. MA231: Introduction to Numerical Methods
5. MA421: Linear Algebra (Inner Product Spaces, Bilinear Forms)
6. MA422: Topology
7. MA428: Measure Theory and Integration
8. MA511: Large Scale Scientific Computation (Parallel Computing, Multi Grid Analysis, Domain Decomposition)
9. MA521: Functional Analysis
10. MA540: Wavelets Transform
11. MA425: Real Analysis
12. MA430: Numerical Analysis
13. MC594: Seminar
14. MA632: Sobolev Spaces
15. MA504: Computational Differential Equation

*Best Teacher (UG) in Mathematics Department: Awarded by Director IIT Patna on 5th September 2018 for the year 2018-19 for teaching MA101 to first-year students.

Teaching Experience:

Assistant Professor: BITS Pilani, Pilani Campus, 21st July 2009 to 28th Dec 2015.
Assistant Professor: IIT Patna, 29th December 2015 to 7th February 2022.
Associate Professor: IIT Panta, 8th February 2022 till date.

Research Interests:

1. Existence and Uniqueness
2. Nonlinear Singular Boundary Value Problems
3. Epitaxial Growth Problems
4. Non-Standard Finite Difference Schemes
5. Numerical Solutions of Nonlinear Partial Differential Equations
6. Theory and Applications of Wavelets
7. Integral Transforms

Techniques Involved:

1. Monotone Iterative Technique, Upper and Lower Solutions
2. Green's Function
3. Eigenfunction Expansion
4. Finite Difference Schemes, Homotopy Perturbation, Variation Iteration Scheme.
5. Theory and Applications of Wavelets
6. Nonstandard Finite Difference Schemes
7. Integral Transforms

Editorial Work: Working as editor of the following journals:
1. Oriental Journal of Physical Sciences Online (ISSN: 2456-799X)
2. Ganita (ISSN: 0046-5402)

Ph.D. Students (Completed):

1. **Mandeep Singh (2011-2015):** Title of the Thesis: Monotone techniques for a class of nonlinear boundary value problems, (Awarded, March 2015).
2. **Sheerin Kayenat (2016-2021):** Title of the Thesis: On the Stability and Convergence of Non-standard Finite Difference Schemes for a Class of Nonlinear ODEs and PDEs, Synopsis submitted on 22nd February 2021. (Awarded, 28th October 2021).
3. **Biswajit Pandit (2017-2022):** Title of the Thesis: On a class of nonlinear singular boundary value problems arising in epitaxial growth. (Awarded, 8th March 2022).
4. **Mukesh Kumar Rawani (2016-2023):** Title of the Thesis: On Stability and convergence of some novel numerical schemes for a class of nonlinear PDEs. (Thesis Submitted on 28th September 2022).
5. **Nazia Urus (2017-2023):** Title of the Thesis: Existence results for a class of nonlinear four-point BVPs in the presence of upper and lower solutions. (Thesis Submitted on 6th November 2022).

Ph.D. Students (Ongoing):
1. **Bivek Gupta (2018 till date):** Theory of Integral Transforms
2. **Navneet Kaur (2019 till date):** Theory of Integral Transforms
3. **Loknath Kannaujia (2020 till date): TBA**
4. **Prabhat Kumar (2021 till date): TBA**
5. **Vamika Rathi (2021 till date): TBA**

MTech Students:
1. **Gopal Jee Jha:** On Approximate Solution for a class of Boundary Value Problems via Fuzzy Transform, 2015-2016.
2. **Narendra Kumar:** On the theory of Wavelets, 2019-20.

3. **Molkam Rakesh:** Wavelets and Image Processing, 2020-21.

MSc Students:

1. Akash 2018
2. Pandav Kumar Chaudhary 2018
3. Naveen Kumar Mandal 2019
4. Rohit Moundekar 2019
5. Zabir Hussain 2020
6. Dinesh Khati 2020
7. Guddu Kumar 2021
8. Sarika Kumari 2021
9. Rajesh Kumar 2021

Sponsored Project: Total Fund Collected 20.72+**16.51+0.5=37.73 lacs (Till 2021)**

1. SERB (DST, New Delhi) sanctioned Rs 50000 as Seed Money (Travel+Contingency) against Project Titled "Nonlinear Singular Differential Equations Arising in Real Life " for the financial year 2014-2015. [Completed]
2. SERB (DST, New Delhi) sanctioned ONE JRF + Travel + Contingency [Rs 16,51,680.00] for the Project Titled "Nonlinear Singular Differential Equations Arising in Real Life" for a period of three years.   [Completed]
3. SERB (DST, New Delhi) sanctioned [Rs 6,60,000.00] a three-year MATRICS project titled "Offset linear canonical Stockwell transform" on 14 January 2022. [On Going] File no. MTR/2021/000907.

Membership of Societies:

1. Indian Mathematical Society **(IMS)**: Life member.
2. Bharat Ganita Parishad **(BGP)**: Life member of

Reviews: Reviewer for Mathematical Reviews® (MathSciNet®) since August 2012

Reviews done for various peer-reviewed international journals:

1. Applied Mathematics and Computation (Elsevier)
2. Applied Numerical Mathematics (Elsevier)
3. Journal of Applied Mathematics and Computing (Springer)
4. International Journal of Applied and Computational Mathematics (Springer)
5. Computational and Mathematical Methods (Springer)
6. SpringerPlus (Springer)
7. Journal of Mathematical Chemistry (Springer)

8. Boundary Value Problems (Springer)
9. Journal of Vibration Engineering & Technologies (Springer)
10. Engineering Computations (Emerald)
11. Numerical Methods for Partial Differential Equations (Wiley)
12. Mathematical Methods in Applied Sciences (Wiley)
13. Proceedings of the National Academy of Sciences, India Section A: Physical Sciences (NASA)
14. Proceedings of the National Academy of Sciences, Physical Sciences (NASA)
15. IJWMIP (World Scientific)
16. Indian Mathematical Society (IMS Journal)
17. Mathematics and Computers in Simulation (Elsevier)
18. Mathematics (MDPI)
19. Ganita (Published by Bharat Ganit Parishad)
20. Applied and Computational Harmonic Analysis (Elsevier)
21. Mathematical Modeling and Analysis (Vilnius Gediminas Technical University)
22. Expert Systems
23. Physics of Fluid (AIP Publishing)

List of Publications:

1. J. H. He, L. Verma, B. Pandit, Amit K. Verma, R. P. Agarwal, A New Taylor Series based Numerical Method: Simple, Reliable, and Promising. Journal of Applied and Computational Mechanics (2023) Shahid Chamran University of Ahvaz, Golestan Street, Ahvaz, 61357-43337 Iran, doi: 10.22055/jacm.2023.43228.4040

2. Navneet Kaur, Bivek Gupta, *Amit K. Verma*, Multidimensional Fractional Wavelet Transforms and Uncertainty Principles, Journal of Computational and Applied Mathematics, Accepted on 31st March 2023.

3. Mukesh Rawani, *Amit K. Verma*, Carlo Cattani, A novel hybrid approach for computing numerical solution of the time-fractional nonlinear one and two-dimensional partial integro-differential equation, *Communications in Nonlinear Science and Numerical Simulation*, Vol. 118 (2023) 106986 (Elsevier) doi.org/10.1016/j.cnsns.2022.106986.

4. Biswajit Pandit, *Amit K. Verma,* Ravi P. Agarwal, Existence and non-existence results for a class of non-self-adjoint 4th order SBVPs arising in real life, *Mathematical Methods in Applied Sciences*, Vo. 46 (2023) 6077 - 6110. doi.org/10.1002/mma.8893 (Wiley).

5. Biswajit Pandit, Mukesh K. Rawani, *Amit K. Verma,* Carlo Cattani, Numerical approximation of higher order singular boundary value problem by using Haar functions, *Journal of Mathematical Chemistry*, Vol. 61 (2023) 539 - 568 (Springer). doi.org/10.1007/s10910-022-01421-z

6. *Amit K. Verma* and Mukesh Rawani, Numerical solutions of generalised Rosenau-KDV-RLW equation by using Haar wavelet collocation approach coupled with NSFD scheme and quasilinearisation, *Numerical Solution of Partial Differential Equations*, Vol. 39 (2023) 1085 - 1107. https://doi.org/10.1002/num.22925 (Wiley).

7. Diksha Tiwari, *Amit K. Verma*, Carlo Cattani, Wavelet solution of a strongly nonlinear Lane-Emden equation, *Journal of Mathematical Chemistry*, 60, 2054 - 2080 (2022) (Springer). https://doi.org/10.1007/s10910-022-01401-3

8. Mohammad Heydari, Nasibeh Karamollahi, Ghasem Barid Loghmani, *Amit K. Verma*, An explicit representation of the three-point Hermite interpolant for the numerical solution of singular boundary value problems, *Applied Numerical Mathematics*, Vol. 182, 2022, Pages 265 - 284 (Elsevier). https://doi.org/10.1016/j.apnum.2022.08.008

9. Sheerin Kayenat and *Amit K. Verma,* On the convergence of NSFD schemes for a new class of advection-diffusion-reaction equations, *Journal of Difference Equations and Applications*, Vol. 28, NO. 7 (2022) 946 - 970 (Taylor-Francis) doi.org/10.1080/10236198.2022.2102425.

10. Bivek Gupta, *Amit K. Verma*, and Carlo Cattani, Quaternionic fractional wavelet transform, accepted for publication to the volume entitled: "Analysis, Geometry, Nonlinear Optimization, and Applications" World Scientific Publication, edited by Themistocles M. Rassias.

11. Sheerin Kayenat, *Amit K. Verma*, On the choice of denominator functions and convergence of NSFD schemes for a class of nonlinear SBVPs, *Mathematics and Computers in Simulation*, Volume 200, October 2022, 263-284, (Elsevier)doi.org/10.1016/j.matcom.2022.04.019

12. Nazia Urus, *Amit K. Verma*, Existence of Solutions for a Class of Nonlinear Neumann BVPs in the Presence of Upper and Lower Solutions, *Mathematical Methods in Applied Sciences*, Vol. 45 (2022) 9622 - 9634 (Wiley) doi:10.1002/mma.8326.

13. Saurabh Tomar, *Amit K. Verma*, K. Vajravelu, An effective method for solving singular boundary value problems with some relevant physical applications, *Computational and Applied Mathematics*, Vol. 41, 17 (2022). https://doi.org/10.1007/s40314-021-01715-z (Springer).

14. Biswajit Pandit, *Amit K. Verma* and Ravi P. Agarwal, Numerical approximations for a class of nonlinear higher order singular boundary value problem by using homotopy perturbation and variational iteration method, *Computational and Mathematical Methods*, 2021; 3(6):e1195. doi:10.1002/cmm4.1195 (Wiley).

15. Mandeep Singh, Nazia Urus, *Amit K. Verma*, A different monotone iterative technique for a class of nonlinear three-point BVPs, *Computational and Applied Mathematics*, Vol. 40, 262 (2021). https://doi.org/10.1007/s40314-021-01653-w, (Springer).

16. Mukesh K. Rawani, Lajja Verma, *Amit K. Verma*, Ravi P. Agarwal, On a weakly L-stable time integration formula coupled with nonstandard finite difference scheme with application to nonlinear parabolic PDEs, *Mathematical Methods in Applied Sciences*, Vol. 45: 1276-1298. doi:10.1002/mma.7853 (Wiley).

17. Sheerin Kayenat, *Amit K. Verma,* On the stability of NSFD schemes for a class of nonlinear generalized advection-diffusion-reaction equation, *Pramana J. Phy.*, 96, 14 (2022). https://doi.org/10.1007/s12043-021-02239-1 (Springer).

18. *Amit K. Verma,* Narendra Kumar, Mandeep Singh, and Ravi P. Agarwal, A note on variation iteration method with an application on Lane-Emden equations, *Engineering Computations*, Vol. 38 No. 10, pp. 3932-3943. https://doi.org/10.1108/EC-10-2020-0604 (Emerald).

19. *Amit K. Verma*, Bivek Gupta, A note on continuous fractional wavelet transform in R^n, *International Journal of Wavelets Multiresolution and Information Processing*, Vol. 20, No. 02, 2150050 (2022) (World Scientific).

20. *Amit K. Verma,* Bivek Gupta, Certain properties of continuous fractional wavelet transform on Hardy space and Morrey space, *Opuscula Mathematica*, Vol. 41, Issue 5, 2021 (University of Science and Technology Press).

21. *Amit K. Verma,* Nazia Urus, Ravi P. Agarwal, Region of existence of multiple solutions for a class of four-point BVPs, *Opuscula Mathematica*, Vol. 41, no. 4, 571-600, (2021), https://doi.org/10.7494/OpMath.2021.41.4.571 AGH (University of Science and Technology Press).

22. *Amit K. Verma,* Mukesh K. Rawani, Carlo Cattani, A numerical scheme for a class of generalized Burgers' equation based on Haar wavelet nonstandard finite difference method, *Applied Numerical Mathematics*, Volume 168, October, Pages 41-54, 2021, https://doi.org/10.1016/j.apnum.2021.05.019 (Elsevier).

23. *Amit K. Verma*, Diksha Tiwari, On some computational aspects of Hermite wavelets on a class of SBVPs arising in exothermic reactions, *Applicable Analysis and Discrete Mathematics*, Accepted, 2021 (the University of Belgrade - School of Electrical Engineering).

24. *Amit K. Verma,* Nazia Urus, Well Ordered Monotone Iterative Technique for Nonlinear Second Order Four Point Dirichlet BVPs, *Mathematical Modelling and Analysis*, Volume 27, Issue 1, 59-77, 2022. (Published by Vilnius Gediminas Technical University).

25. *A. K. Verma*, B. Pandit, R.P. Agarwal, Analysis and Computation of Solutions for a Class of Nonlinear SBVPs Arising in Epitaxial Growth, *Mathematics*, Vol. 9(7), 774, 2021, https://doi.org/10.3390/math9070774 (MDPI).

26. Yulia Koroleva, Alexander Korolev, *Amit K Verma*, Analysis of Herschel-Bulkley model of blood flow through rough vessels, Colloquium-journal, 1(88) 2021.

27. *Amit K. Verma,* Mukesh Kumar Rawani, Ravi P. Agarwal, A novel approach to compute the numerical solution of variable coefficient fractional Burgers' equation with delay, *Journal of Applied and Computational Mechanics*, 7(3), 1550-1564, (2021) DOI: 0.22055/JACM.2021.35574.2689 (Shahid Chamran University of Ahvaz, Iran).

28. Amit K. Verma, Narendra Kumar, Diksha Tiwari, Haar wavelets collocation method for a system of nonlinear singular differential equations, *Engineering Computations*, Vol. 38 No. 2, pp. 659-698, 2021, https://doi.org/10.1108/EC-04-2020-0181 (Emerald).

29. *Amit K. Verma,* Biswajit Pandit, Ravi P. Agarwal, An effective numerical technique to solve Lane-Emden type equations based on the Galerkin finite element method, *Advances in Mathematical Sciences and Applications*, Vol. 30, No. 1, 39-64, 2021, (Gakkotosho).

30. *Amit K. Verma,* Biswajit Pandit, Ravi P. Agarwal, Existence and nonexistence results for a class of fourth-order coupled singular boundary value problems arising in the theory of epitaxial growth, *Mathematical Methods in Applied Sciences*, 2020 1 - 34 (2022) https://doi.org/10.1002/mma.6905 (Wiley).

31. *Amit K. Verma,* Biswajit Pandit, Ravi P. Agarwal, On multiple solutions for a fourth-order nonlinear singular boundary value problems arising in epitaxial growth theory, *Mathematical Methods in Applied Sciences*, Volume 44, Issue 7, Pages 5418-5435, (2021), https://doi.org/10.1002/mma.7119 (Wiley).

32. *Amit K. Verma,* Mukesh K. Rawani, Ravi P Agarwal, A high-order weakly L-stable time integration scheme to solve Burger's equation, *Computation*, Vol. 8(3), 72, 2020, https://doi.org/10.3390/computation8030072 (MDPI).

33. *Amit K. Verma,* Sheerin Kayenat, Applications of Modified Mickens-Type NSFD Schemes to Lane-Emden Equations, *Computational and Applied Mathematics*, Vol. 39, Article No. 227, 2020, https://doi.org/10.1007/s40314-020-01257-w (Springer).

34. *Amit K. Verma,* Biswajit Pandit, Lajja Verma and Ravi P. Agarwal, A Review on a Class of Second Order Nonlinear Singular BVPs, *Mathematics*, Vol. 8(7), 1045, 2020, https://doi.org/10.3390/math8071045 (MDPI).

35. A.N. Filippov, Yu.O. Koroleva, *A.K. Verma*, Cell Model of a Fibrous Medium (Membrane). Comparison Between Two Different Approaches to Varying Liquid Viscosity, *Membranes and Membrane Technologies*, Vol. 2, No. 4, 230-243, 2020, https://doi.org/10.1134/S2517751620040058 (Springer).

36. Sawti, Karanjeet Singh, *Amit K. Verma,* Mandeep Singh, Higher order Emden-Fowler type equations via Uniform Haar Wavelet resolution technique, *Journal of Computational and Applied Mathematics*, Vol. 376, 112836, 2020, https://doi.org/10.1016/j.cam.2020.112836 (Elsevier).

37. *Amit Kumar Verma,* Biswajit Pandit, Carlos Escudero, Numerical solutions for a class of singular boundary value problems arising in the theory of epitaxial growth, *Engineering Computations* (Vol. 37, No. 7, 2539-2560, 2020, https://doi.org/10.1108/EC-08-2019-0360 (Emerald).

38. *Amit K. Verma,* Sheerin Kayenat, Gopal Jee Jha, A note on the convergence of fuzzy transformed finite difference methods, *Journal of Applied Mathematics and Computing*, Vol. 63, 143-170, 2020, https://doi.org/10.1007/s12190-019-01312-8 (Springer).

39. Amit K. Verma, Mandeep Singh and Ravi P. Agarwal, Regions of existence for a class of nonlinear diffusion type problems, *Applicable Analysis and Discrete Mathematics*, Vol. 14, 106-121, (2020), https://www.jstor.org/stable/26964948 (University of Belgrade - School of Electrical Engineering).

40. *Amit K. Verma,* Biswajit Pandit and Ravi P. Agarwal, On approximate stationary radial solutions for a class of boundary value problems arising in epitaxial growth theory, *Journal of Applied and Computational Mechanics,* Vol. 6 (4), 713-734, 2020, 10.22055/JACM.2019.30982.1806 (Shahid Chamran University of Ahvaz, Ahvaz, Iran).

41. *Amit K. Verma,* Nazia Urus, Mandeep Singh, Monotone Iterative Technique for a Class of Four Point BVPs with Reversed Ordered Upper and Lower Solutions, *International Journal of Computational Methods,* Vol. 17, No. 9, 1950066 (22 pages) 2020, https://doi.org/10.1142/S021987621950066X (World Scientific).

42. *Amit K. Verma,* Sheerin Kayenat, An efficient Mickens' type NSFD scheme for the generalized Burgers Huxley equation, *Journal of Difference Equations and Applications,* Vol. 26, Issue 9-10, 2020, https://doi.org/10.1080/10236198.2020.1812594 (Taylor & Francis).

43. *Amit K. Verma,* Sheerin Kayenat, On the stability of Micken's type NSFD schemes for generalized Burgers Fisher equation, *Journal of Difference Equations and Applications,* Vol. 25, No. 12, 1706-1737, 2019, https://doi.org/10.1080/10236198.2019.1689236 (Taylor & Francis).

44. Mandeep Singh, *Amit K. Verma,* Ravi P. Agarwal, On an iterative method for a class of 2 point & 3 point nonlinear SBVPs, *Journal of Applied Analysis and Computation,* Volume 9, Number 4, August 2019, 1242-1260, 10.11948/2156-907X.20180213 (Shanghai Normal University and Wilmington Scientific Publisher, LLC).

45. *Amit K. Verma* and Diksha Tiwari, Higher resolution methods based on Quasilinearization and Haar Wavelets on Lane-Emden Equations, *International Journal of Wavelets Multiresolution and Information Processing,* Vol. 17, No. 03 (2019), https://doi.org/10.1142/S021969131950005X (World Scientific).

46. *Amit K. Verma* and Sheerin Kayenat, Correction to: On the convergence of Mickens' type nonstandard finite difference schemes on Lane–Emden type equations, *Journal of Mathematical Chemistry,* 2019/2/28, https://doi.org/10.1007/s10910-019-01013 (Springer).

47. Nazia Urus, *Amit K. Verma,* Mandeep Singh, Some New Existence Results for a Class of Four Point Nonlinear Boundary Value Problems, *JNPG-The Journal of Revelations,* Vol. 3 (1), 7-13, 2018.

48. *Amit K. Verma* and Sheerin Kayenat, On the Convergence of Mickens' Type Nonstandard Finite Difference Schemes on Lane-Emden Type Equations, *Journal of Mathematical Chemistry,* 56 (2018), no. 6, 1667–1706, https://doi.org/10.1007/s10910-019-01013-4 (Springer).

49. Mandeep Singh, *Amit K. Verma,* Nonlinear three point Singular BVPs : A Classification, *Communications in Applied Analysis,* 21, No. 4 (2017), 513-532 ISSN: 1083-2564, http://www.acadsol.eu/en/articles/21/4/2.pdf (Dynamic Publisher).

50. Mandeep Singh and *Amit K. Verma,* An effective computational technique for a class of Lane-Emden equations, *Journal of Mathematical Chemistry,* Vol. 54 (2016), no. 1, 231–251, https://doi.org/10.1007/s10910-015-0557-8 (Springer).

51. Amit K. Verma, *Mandeep Singh*, A note on existence results for a class of three-point nonlinear BVPs, *Mathematical Modeling and Analysis*, Vol. 20, Issue 4 (2015) 457-470, https://doi.org/10.3846/13926292.2015.1065293 (Taylor & Francis).

52. Amit K. Verma, *Mandeep Singh*, Singular nonlinear three Point BVPs arising in thermal explosion in a cylindrical reactor, *Journal of Mathematical Chemistry*, Vol. 53 (2) (2015) 670-684, https://doi.org/10.1007/s10910-014-0447-5 (Springer).

53. Mandeep Singh, *Amit K. Verma*, Ravi P. Agarwal, Maximum and anti-maximum principles for three point SBVPs and nonlinear three point SBVPs, *Journal of Applied Mathematics and Computing*, Vol. 47 (2015), no. 1-2, 249-263, https://doi.org/10.1007/s12190-014-0773-6 (Springer).

54. *Amit K. Verma*, Lajja, Higher order time integration formula with application on Burgers' equation, *International Journal of Computer Mathematics*, Vol. 92 (No. 4) (2015) 756-771, https://doi.org/10.1080/00207160.2014.909032 (Taylor & Francis).

55. *Amit K. Verma*, Mandeep Singh, Maximum principle and nonlinear three point singular boundary value problems arising due to spherical symmetry, *Communications in Applied Analysis*, Vol. 19 (2015) 175–190, http://www.acadsol.eu/en/articles/19/2/2.pdf (Dynamic Publisher).

56. *Amit K. Verma*, Mandeep Singh, Existence of solutions for three-point BVPs arising in bridge design, *Electronic J. Differential Equation*, Vol. 2014 (2014), No. 173, pp. 1-11, ISSN: 1072-6691, Published from Department of Mathematics, Texas State University-San Marcos, USA https://ejde.math.txstate.edu/Volumes/2014/173/verma.pdf.

57. Mandeep Singh and *Amit K. Verma*, [Invited Article] Picard type iterative scheme with initial iterates in reverse order for a class of nonlinear three point BVPs, *International Journal of Differential Equation*, Volume 2013 (2013), Article ID 728149, 6 pages https://doi.org/10.1155/2013/728149 (Hindawi).

58. Mandeep Singh and *Amit K. Verma*, On a monotone iterative method for a class of three point nonlinear nonsingular BVPs with upper and lower solutions in reverse order, *Journal of Applied Mathematics and Computing*, Vol. 43 (2013) 99–114, https://doi.org/10.1007/s12190-013-0654-4 (Springer).

59. K. Pandey, Lajja Verma and Amit K. Verma, Du Fort-Frankel finite difference scheme for Burgers' equation, Arabian Journal of Mathematics, Volume 2, (2013), 91–101 https://doi.org/10.1007/s40065-012-0050-1 (Springer).

60. *Amit K. Verma* and Ravi P. Agarwal, Upper and lower solutions method for regular singular differential equations with quasi-derivative boundary conditions, *Communications in Nonlinear Science and Numerical Simulation*, Volume 17, Issue 12, December 2012, Pages 4551–4558 https://doi.org/10.1016/j.cnsns.2012.03.027 (Elsevier).

61. *Amit K. Verma*, Ravi P. Agarwal and Lajja Verma, Bessel functions and singular BVPs arising in physiology in the presence of upper and lower solutions in reverse order, *Journal*

of Applied Mathematics and Computing, Volume 39, Numbers 1-2 (2012), 445-457, https://doi.org/10.1007/s12190-011-0534-8 (Springer).

62. *Amit K. Verma*, The Monotone iterative method and regular singular nonlinear BVP in the presence of reverse ordered upper and lower solutions, *Electronic J. Differential Equation*, Vol 2012 (2012), No. 4, 1-10, ISSN: 1072-6691, Published from Department of Mathematics, Texas State University-San Marcos, USA
https://ejde.math.txstate.edu/Volumes/2012/04/verma.pdf.

63. R. K. Pandey and *Amit K. Verma*, [Invited Article] On a constructive approach for derivative dependent singular boundary value problems, *International Journal of Differential Equations*, Vol. 2011 (2011), Article ID 261963, 16 Pages https://doi.org/10.1155/2011/261963 (Hindawi).

64. *Amit K. Verma* and Lajja Verma, [Invited Article] Nonlinear singular BVP of limit circle type and the presence of reverse ordered upper and lower solutions, *International Journal of Differential Equations*, Vol. 2011 (2011), Article ID 986948, 13 Pages https://doi.org/10.1155/2011/986948 (Hindawi).

65. K. Pandey, Lajja Verma and *Amit K. Verma*, L-stable Simpson's 3/8 Rule and Burgers' Equation, *Applied Mathematics and Computation*, Vol. 218 (2011) 1342–1352, https://doi.org/10.1016/j.amc.2011.06.017 (Elsevier).

66. *Amit K. Verma*, The monotone iterative method and zeros of Bessel functions for nonlinear singular derivative dependent BVP in the presence of upper and lower solutions, *Nonlinear Analysis: Theory, Methods & Applications*, Vol. 74, Issue 14, October 2011, Pages 4709-4717, https://doi.org/10.1016/j.na.2011.04.037 (Elsevier).

67. R. K. Pandey and *Amit K. Verma*, On solvability of derivative dependent doubly singular boundary value problems, *Journal of Applied Mathematics and Computing*, Vol. 33 (2010) 489–511, https://doi.org/10.1007/s12190-009-0299-5 (Springer).

68. R. K. Pandey and *Amit K. Verma*, Monotone method for singular BVP in the presence of upper and lower solutions, *Applied Mathematics and Computation*, Vol. 215 (2010) 3860–3867, https://doi.org/10.1016/j.amc.2009.08.018 (Elsevier).

69. K. Pandey, Lajja Verma and *Amit K. Verma*, On a finite difference scheme for Burgers' equation, *Applied Mathematics and Computation*, Vol. 215, Issue 6 (2009) 2206–2214, https://doi.org/10.1016/j.amc.2009.08.018 (Elsevier).

70. R. K. Pandey and *A. K. Verma*, A note on existence-uniqueness results for a class of doubly singular boundary value problems, *Nonlinear Analysis: Theory, Methods & Applications*, Vol. 71, Issues 7-8 (2009) 3477-3487, https://doi.org/10.1016/j.na.2009.02.012 (Elsevier).

71. R. K. Pandey and *A. K. Verma*, Existence-uniqueness results for a class of singular boundary value problems-II, *Journal of Mathematical Analysis and Applications*, Vol. 338 (2008) 1387 – 1396, https://doi.org/10.1016/j.jmaa.2007.06.024 (Elsevier).

72. R. K. Pandey and *A. K. Verma*, Existence-uniqueness results for a class of singular boundary value problems arising in physiology, *Nonlinear Analysis: Real World Applications*, Vol. 9 (2008) 40 – 52, https://doi.org/10.1016/j.nonrwa.2006.09.001 (Elsevier).

Conference Papers

1. Mukesh Kumar Rawani, Amit K. Verma, On weakly L-stable time integration formula with an application to non-linear parabolic partial differential equations, International Conference on Advances in Differential Equations and Numerical, Analysis (ADENA-2020), 12-15, Oct 2020, Indian Institute of Technology Guwahati, Department of Mathematics, Guwahati, India.
2. Mukesh Kumar Rawani, Amit K. Verma, A numerical scheme based on Haar wavelet NSFD method for the solution of a class of generalized Burger's equation, 86th Annual Conference of the Indian Mathematical Society, An International Meet (IMS 2020) 17-20, Oct 2020, School of advanced sciences Vellore institute of technology, Vellore.
3. Sheerin Kayenat and Amit K. Verma, Mickens' type exact and nonstandard finite difference schemes for the generalized version of diffusion reaction equation, 3rd International Conference on Pure And Applied Mathematics (ICPAM-VAN 2020), 03-05, Sep 2020, Yuzuncu Yil University, Department of Mathematics, Van, Turkey.
4. Sheerin Kayenat and Amit K. Verma, On the stability of Mickens' type nonstandard finite difference schemes for the advection diffusion reaction equation, International Conference on Advances in Differential Equations and Numerical Analysis (ADENA-2020), 12-15, Oct 2020, Indian Institute of Technology Guwahati, Department of Mathematics, Guwahati, India.
5. Sheerin Kayenat and Amit K. Verma, Exact and Nonstandard Finite Difference Schemes for the Generalized Form of Burgers Fisher Equation, 86th Annual Conference of the Indian Mathematical Society An International Meet (IMS 2020), December 17-20, 2020, Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, Vellore, India.
6. Nazia Urus and Amit K. Verma, Monotone Iterative Technique for Nonlinear Four Point Neumann BVPs with Non Well Ordered Upper and Lower Solutions, International Conference on Advances in Differential Equations and Numerical Analysis (ADENA-2020), 12-15, Oct 2020, Indian Institute of Technology Guwahati, Department of Mathematics, Guwahati, India.
7. Nazia Urus and Amit K. Verma, Well ordered monotone iterative technique for a class of 2nd order nonlinear 4-point BVPs, 3rd International Conference on Pure And Applied Mathematics (ICPAM-VAN 2020), 03-05, Sep 2020, Yuzuncu Yil University, Department of Mathematics, Van, Turkey.
8. Nazia Urus and Amit K. Verma, An Effective Iterative Method and Existence Result for a Class of Secon-Order Four-Point Nonlinear BVPs, 86TH Annual Conference of The Indian Mathematical Society (IMS2020), 17-20, Dec 2020, Indian Institute of Technology Guwahati, Department of Mathematics, Guwahati, India.

9. Bivek Gupta and Amit K. Verma, Fractional Wavelet Transform in R^n, 86th Annual Conference of the Indian Mathematical Society An International Meet (IMS 2020), December 17-20, 2020, Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, Vellore, India.

10. Bivek Gupta and Amit K. Verma, Linear Canonical Wavelet Transform, The 3rd International Conference on Frontiers in Industrial and Applied Mathematics, FIAM-2020, December 21-22, 2020, NIT Jamshedpur, India.

11. Narendra Kumar and Amit K. Verma, Haar wavelets collocation method for a class of system of Lane-Emden equations with Four Point Boundary Conditions, International Conference on Advances in Differential Equations and Numerical Analysis (ADENA), IIT Guwahati, Oct 12-15 2020.

12. Narendra Kumar and Amit K. Verma, Application of Haar wavelet on a class of system of Coupled Lane-Emden equation, 86th Annual Conference of the Indian Mathematical Society (IMS 2020), Department of Mathematics, SAS, VIT, Vellore, India December 17-20, 2020.

13. Narendra Kumar and Amit K. Verma, A numerical approach for a class of Emden-Fowler equation with the aid of Haar wavelets collocation method, The 3rd International Conference on Frontiers in Industrial and Applied Mathematics-2020 (FIAM-2020) December 21-22, 2020.

14. Biswajit Pandit and Amit Kumar Verma, 86th Annual Conference of the Indian Mathematical Society (IMS), VIT Vellore, India, 2020.

15. Biswajit Pandit and Amit Kumar Verma, National conference on Recent Trends in Differential Equation: Theory, Modelling and Computation, IIT Patna, India, 2019.

16. Nazia Urus and Amit K. Verma, Method of upper-lower solutions: Existence Results for Four Point Non-linear BVPs, National Conference on Recent Advances in Physical Sciences (NCRAPS-2019), 12-13, Oct 2019, R. N. College, Hajipur, Vaishali, Bihar.

17. Sheerin Kayenat and Amit K. Verma, An Exact and Nonstandard Finite difference Schemes for the solution of the Generalized Burgers Huxley Equation, National Conference on Recent Trends in Differential Equation: Theory, Modeling and Computation 2019 (NCDE-2019) 29th-30th, March 2019, IIT Patna.

18. Amit K. Verma and Nazia Urus and Mandeep singh, Some new existence results for a class of four point nonlinear boundary value problem, National Conference on recent trends in Differential Equation: Theory, Modeling and Computation 2019 (NCDE-2019), 29-30, March 2019, Indian Institute of Technology Patna.

19. Mukesh K. Rawani and Amit K. Verma, On weakly L stable higher order scheme with an application on Burgers' equation, National Conference on Recent Advances in Physical Sciences (NCRAPS-2019), 12-13, Oct 2019, R. N. College, Hajipur, Vaishali, Bihar.

20. Amit Verma and Mukesh Kumar Rawani, Higher order numerical scheme with application on Burgers' equation, National Conference on Recent Trends in Differential Equation: Theory, Modelling and Computation 2019 (NCDE-2019), 29-30, March 2019, Indian Institute of Technology Patna.

21. Amit K. Verma, Mandeep Singh, Modified variational iteration method for three point SBVPs, International Conference on Algebra, Geometry, Analysis and their Applications (ICAGAA-14) November 27-29, 2014 at Jamia Milia Islamia, New Delhi.

22. Amit K. Verma, On a of Class Singular BVP Arising in Thermal Explosion: Upper and Lower Solutions in Reverse Order, National Conference on Modeling, Computational Fluid Dynamics & Operations Research, Department of Mathematics BITS Pilani, Rajasthan, February 4-5, 2012.

Invited Talks and Chaired Sessions:

1. Delivered lectures on Mensuration for classes VI to XII during ISMS 2023 at IIT Patna from 16th June 2023 to 15th July 2023.
2. Delivered 6 Lectures on Chapter 2 POSITIVE BOREL MEASURES of Real and Complex Analysis by Walter Rudin for Annual Foundation School II (2023) at IIT Patna 22/05/2023 to 17/06/2023 https://www.atmschools.org/school/2023/AFS-II/afs-iit-patna.
3. Delivered an invited talk for IOCMA (International Online Conference on Mathematics and Applications) Live Session 3 "Difference and Differential Equations" on Friday, 5 May 2023 at 3:30 pm CEST (Chaired by Prof. Alberto Cabada, Speakers: Ferhan Merdivenci Atici, Gennaro Infante, Jifeng Chu, Amit Kumar Verma). https://iocma2023.sciforum.net/
4. Delivered an invited talk for the research lecture series "On constructive approach for solving a class of nonlinear singular BVPs arising in real life" on 10 February 2023 at Lucknow University.
5. Delivered three talks on Polar Coordinates and Iterative Techniques on 13th and 18th January 2023 for the refresher course for faculty members organized by UGC and Lucknow University.
6. Delivered an invited talk on National Mathematics Day at VBS Purvanchal University Jaunpur, Uttar Pradesh, India on 22nd December 2022.
7. Delivered an invited talk (Online) on National Mathematics Day on 22nd December 2022 at RN College Hajipur.
8. Conducted a session on hands-on Mathematica at the AICTE-sponsored Faculty Development Program at Madan Mohan Malaviya University of Technology Gorakhpur Uttar Pradesh on 17th December 2022.
9. Delivered an invited talk on National Mathematics Day at VBS Purvanchal University Jaunpur, Uttar Pradesh, India on 22nd December 2022.
10. Delivered an invited talk titled "A novel numerical scheme based on Haar wavelet coupled with NSFD scheme for a class of generalized Rosenau-KDV-RLW equation" held on December 14 2022 at 4:00 (Israeli time) in the frame Drakhlin's Seminar on Functional Differential Equations hosted by Ariel University, Israel.
11. Delivered an invited talk at the National Conference on Harmonic Analysis and Applications" (NCHAA-2022) during December 02-04, 2022 at the Indian Institute of Technology (Indian School of Mines), Dhanbad.

12. Delivered a lecture series on sequences and their applications at Sri Lal Bahadur Shastri College Gonda Uttar Pradesh on 30 November 2022.

13. Delivered an invited talk (Online) for Refresher Course in Mathematics at Allahabad University on 4th November 2022.

14. Delivered a talk on Polar curves at Shri Lal Bahadur Shastri Degree College, Gonda on 31st October 2022.

15. Delivered a Role Model Talk for Vigyan Jyoti Scholars (STEM Education) at Jawahar Navodaya Vidyalaya, Kabir Dham, Chhatisgarh on 26th September 2022.

16. Delivered a talk on "Mathematics and Mathematica: Real life applications on 7th September 2022 at NSIT Bihta (Patna) as part of the Induction Program 2022.

17. Delivered a talk on "Understanding the world through Mathematics" at DPS Patna on 27th August 2022.

18. Delivered a series of Lectures on Riemann Integration and Riemann Hypothesis as a resource person for the Faculty Development Program at Birla Education Trust, from July 4-7, 2022.

19. Delivered an invited talk on "Non-standard finite difference schemes", at the International Conference on Dynamical Systems and Numerical Methods, Department of Mathematics, Jamia Millia Islamia, New Delhi-110025, India (ICDSNM-22), May 20-21, 2022.

20. Delivered a talk titled "On some monotonic iterative schemes and upper-lower Solutions" as part of Drakhlin's Seminar on Functional Differential Equations, March 23, 2022 organized by Ariel University, Israel.

21. Delivered a motivational talk on "Area and Surface Area" in Science Awareness Mela, organized during February 26th-28th, 2022 at Kunwar Inter College Narwar, Mardah Ghazipur.

22. Delivered an Invited talk titled "Some new existence results for a class of nonlinear SBVP arising epitaxial growth" and chaired a session in Recent Developments in Engineering and Technology" (ICRDET-2022) February 25th-26th, 2022 at Anand International College of Engineering, Jaipur.

23. Chaired a session in the 87th Annual Conference of Indian Mathematical Society (IMS) organized by the Department of Applied Sciences INEC, MGM University, Aurangabad during December 4-7, 2021.

24. Delivered a talk on "Polar Curves and Mathematica" at the Centre for Applied Mathematics and Computing, Siksha 'O' Anusandhan Deemed to be University on 27th November 2021.

25. Delivered a talk on "Mathematica and its applications" at an FDP organized by MMMTU, Gorakhpur, from 16-20 August 2021, Mathematical Tools and Recent Advances in Applied Mathematics (MTRAAM-2021) (Sponsored by AICTE Training and Learning Academy ATAL).

26. Delivered a talk on "Classroom teaching: Learning Mathematical Methods for Engineering and Science Students" on Friday, 12 March 2021 organized by FDP by Jaipur National University, Jaipur.

27. Delivered a talk titled "On the existence of solutions for a class of nonlinear singular BVPs arising in real life" as part of Drakhlin's Seminar on Functional Differential Equations, March 3 2021 organized by Ariel University.
https://www.ariel.ac.il/wp/math/en/2021/03/03/on-the-existence-of-solutions-for-a-class-of-nonlinear-singular-bvps-arising-in-real-life/

28. Delivered a talk on "Mathematics, Mathematicians and Some Unsolved Problems, on 22nd December 2020, Department of Applied Science & Humanities, Invertis University, Bareilly.

29. Delivered a talk on 4th December 2020 on Numerical study of Stokes-Brinkman systems with varying liquid viscosity web conference "Membrane process modeling" in celebration of the 60th birth anniversary of Professor A.N. Filippov, Gubkin University, Russia.

30. Delivered an invited talk on 1st December 2020 on "Non-standard finite difference techniques" on the foundation day of MMMUT, Gorakhpur.

31. Delivered an invited talk on "Mathematica" on 22 September 2020, for the Faculty Development Program (21 September - 25 September) at Department of Mathematics and Scientific Computing, Madan Mohan Malaviya University of Technology, Gorakhpur, TEQIP-III sponsored, On Mathematical Tools and Recent Advances in Mathematics (MTAM-2020).

32. Delivered webinar on "Teaching and Learning Mathematics with Mathematica" at RMLU Ayodhya on 11th September 2020.

33. Delivered an invited talk on "Modeling with Mathematica'' on 31st July 2020, for the Faculty Development Program (28 July - 2 Aug) at Invertis University, Bareilly.

34. Delivered a lecture on Modeling of Heat conduction in human mind, during National Webinar "Covid 19: A mathematical approach to opportunities and challenges" organized by Pandit Deen Dayal Upadhyay Girls PG College, on 30th June 2020.

35. Invited Lecture at R N College Hajipur, Vaishali, during NCRAPS–2019, R. N. College, Hajipur, 12-13 October 2019.

36. Invited Lecture on Matlab under TEQIP at LNJPIT Chapra on 29th January 2019.

37. Invited talk IET Sitapur in DST Inspire camp from 15th June 2018 to 19th June 2018.

38. Invited talk DST Inspire Camp at Gopinath PG College, Gazipur, UP, on 21st Dec 2017.

39. Guest lectures on Mathematica in Faculty Development Program organized at IIT (ISM) Dhanbad from 4-12-2017 to 9th Dec 2017.

40. Invited talk at KKC College, Lucknow on Monotone Iterative Technique on 24th Nov 2017.

41. Lecture on LaTeX for National Workshop on Computational and Industrial Mathematics-2017 held at KIIT Bhubaneswar from 16-21 May 2017.

42. Resource person at BBVP Pilani 15-16 April 2017 on the occasion of National Conference on Mathematics, Googol 2017. A talk was also delivered on Fermat's Last Theorem and the life of Andrew Wiles.

43. Lecture on the occasion of the inauguration of the Regional Mathematics Olympiad Camp at Jawahar Navodaya Vidyalaya, Bikram, Patna on 2nd October 2016.

44. Invited talk at ICMBAA 2015 AMU Aligarh, titled "A Review on Monotone Iterative Technique Related to Upper and Lower Solutions for a Class of Nonlinear Boundary Value Problems", on 5th June 2015.

45. Invited talk at UGC-sponsored National Conference on Applied Mathematics: Numerical analysis, Algebra & Computational Mathematics, Gudleppa Hallikeri College, Haveri, Karnataka, titled "Monotone Iterative Technique for a Class of Boundary Value Problems: A Review", on dated: 30th Jan 2015 & 31st Jan 2015. I also acted as an advisory board member of the conference.

46. Lecture on Beamer and Thesis writing in National Workshop on LaTeX and MATLAB for beginners at BITS Pilani, Pilani, Rajasthan, India on dated 24-28 Nov 2014.

47. Lecture on Valedictory of GANIT week on 22nd December 2014, in Birla School, Pilani.

48. Lecture on 17th December 2014, in Birla Shishu Vihar, Pilani as part of Ganit Week.

49. Lecture on GANIT Week on 16th December 2014, in Ceeri Vidya Mandir, Pilani.

50. Coordinated an event on behalf of BITS Pilani "INFINITY 14" at Aditya Birla World Academy, Mumbai on 21st Nov 2o14.

51. Lecture on Mathematicians and Mathematica in Regional Science Congress at Jawahar Navodaya Vidyalaya Kajra, 13th NOV, 2014.

52. Lecture on Calculus with Mathematica was delivered in BBVP, Pilani on 18th August 2014 as part of the celebration in BBVP as Mathematics Week.

53. DST Inspire lecture (http://www.inspire-dst.gov.in/) on 1st August 2014 in IET Sitapur on Life of Euler, Gauss, Ramanujan, and Numerical Integration.

54. DST Inspire lecture (http://www.inspire-dst.gov.in/) on 14th July 2013 in SRIMT BKT Lucknow on Calculus via Mathematica.

55. Lecture on "Learning Calculus with Mathematica" in BBVP, Pilani on 16th August 2012 as part of the celebration in BBVP as Mathematics Week.

Workshop/GIAN/Conferences Organized:

1. Modeling approaches of Nanoscale filtration processes of solutions and Suspensions (Prof. Anatoly N. Filippov, Russia), MHRD under GIAN, 2016, 5.44 Lacs

2. Workshop on Fluid Mechanics, DST SERB New Delhi India, 2016, 1.25 Lacs

3. Symposium on Modeling and Computation, National Mathematics Initiative (DST), IISc Bangalore, 2016, 0.75 Lacs
4. Monotone Iterative Technique (Prof. Alberto Cabada, Spain), MHRD under GIAN, 2017 5.44 Lacs
5. Workshop on Sobolev Spaces, CSIR, New Delhi, 2017, 0.40 Lacs
6. NCDE 2019, DST(SERB), CSIR, 2019, 2.00 Lacs
7. Modeling approaches for coupled multiphysics engineering problems, MHRD GIAN (Co-Coordinator) Prof.M. Pathak (Coordinator), 2017, 5.44 Lacs
8. NCDE 2023 Coconvener. (Dr PKS Convener, Dr NKT Coconvener)

Workshop / Conference Attended

1. Conference on Mathematics – 2001 held on November 24-25, 2001 in the Department of Mathematics and Astronomy, Lucknow University, organized by Bharat Ganita Parishad.
2. Conference on Mathematics – 2003 held on November 15-16, 2003 in the Department of Mathematics and Astronomy, Lucknow University, organized by Bharat Ganita Parishad.
3. Conferences on Mathematics – 2003 held in December 2003 in the Department of Mathematics and Astronomy, Lucknow University, organized by Indian Mathematical Society.
4. Science Conclave: A Congregation of Nobel Prize Winners 2008 - held on December 15-21, 2008 in IIIT Allahabad.
5. Workshop on "Tools and Techniques in Statistics and Simulation" organized by BITS Pilani from 29th September to 01st October 2011.
6. National Conference on Advances in Mathematics. March 7-8, 2014, Hansraj College, New Delhi.
7. Attended a one-day National Workshop of IIT Teachers for IIT-PAL at IIT Delhi on 15th September 2016. (MHRD Initiative).
8. Group Monitoring Workshop at IIT Guwahati, 20th April 2017 (SERB DST New Delhi).

Responsibilities in Workshops and Conferences

1. Organizing Secretary at National Workshop on LaTeX and MATLAB for beginners at BITS Pilani, Pilani, Rajasthan, India on dated 24-28 Nov 2014.
2. Member of Advisory Committee at UGC sponsored National Conference on Applied Mathematics: Numerical analysis, Algebra & Computational Mathematics on dated 30 & 31 January 2015 at Gudleppa Hallikeri College, Haveri, Karnataka

Past (at BITS Pilani 2009-2015):

Study Oriented Projects at BITS Pilani: Total 23 projects are guided. This is mainly designed for undergraduate students at BITS Pilani, since 2009.
First Degree Thesis at BITS Pilani: No of students completed first-degree thesis is 3.

P. Pruthvi Reddy, 2007B4A2710P Numerical solutions of Burger's equation 2012-13.

Ayushi Dawra, 2010B4A7656P Dahlquist's Stability Theory, 2014-15.

Rishi Kumar, 2011A8TS285P, Stability of Ordinary and Partial Differential Equations 2015-16.

Informal Projects at BITS Pilani: Total number of informal projects completed are 3.

One student from IISER and two students from BITS (KVPY fellowship) completed this as part of their summer project for fellowships.

Study Oriented Projects Guided at BITS Pilani 2009-2015.

1. 2010-2011, Second Semester, Sandeep Dasika: Application of Differential Equations in Solving Real Life Problems
2. 2011-2012, First Semester, Bhawika Jain: Analytical Solutions of Ordinary Differential Equations
3. 2011-2012, First Semester, Nishank Varshney: Existence-Uniqueness Results for a Class of Singular Boundary Value Problems
4. 2011-2012, First Semester, P. Nikitha Shravan: P Vs NP Problems
5.
6. 2011-2012, Second Semester, Prakash Yadav: P Vs NP Problems
7. 2011-2012, Second Semester, Manu Gulyani: Data Compression (Audio Compression)
8. 2011-2012, Second Semester, Ashwin Menon: P Vs NP Problems
9. 2011-2012, Second Semester, Nishank Varshney: Singular BVP arising in thermal explosion
10. 2012-2013, First Semester, Abhishek Singh: Study of a Model on Unemployment.
11. 2012-2013, First Semester, Olive Chakraborty: Study of Some Advanced Concepts of Complex Analysis.
12. 2012-2013, First Semester, Ramprasad M Nambisan: Study of Numerical Solutions of Partial Differential Equations Using MATLAB.
13. 2012-2013, First Semester, Kale Pooja Pramod: Numerical Solution of Problem Arising in Tumour Growth.
14. 2012-2013, Second Semester, Olive Chakraborty: Study of properties of Riemann Zeta functions and their relation with prime numbers.
15. 2012-2013, Second Semester, Satish Prakash Garg: Development of packages in Matlab / Mathematica for solving boundary value problems for ordinary differential equations.
16. 2012-2013, Second Semester, Sabyasachi Upadhyay: A study on prime numbers and their applications.
17. 2013-14, First Semester: Vyanktesh M. Mundhada: Advanced Complex Analysis
18. 2013-14, First Semester: Ramprasad M Nambisan: Development of a new application package in MATHEMATICA for Differential Equations
19. 2013-14, Second Semester, Ayush Khaitan: A Study of Algebraic Topology.
20. 2013-14, Second Semester, Vyanktesh M. Mundhada: A Study of Algebraic Topology.
21. 2013-14, Second Semester, Gokula Krishnan: Study of AKS Primality Testing Algorithm
22. 2013-14, Second Semester, Nerella Yashaswai Venkat: Wavelets and their Application to Signal Processing

23. 2013-14, Second Semester, Mantinderjit Singh: Mathematical Theory of Computation
24. 2013-14, Second Semester, Akshit Seth (Reading Course) Computational Science and Engineering.
25. 2014-15, First Semester, Siddharth Sabharwal: Analysis On Euclidean Spaces
26. 2014-15, First Semester, Akshay Aurora: Study of Algorithms Related to Cryptography
27. 2014-15, First Semester, Mantinderjit Singh: Cellular Automata and Complexity
28. 2014-15, Second Semester, Prathamesh D Hoshing: Numerical Solution of Nonlinear PDEs
29. 2014-15, Second Semester, Akshay Aurora: Elliptic Curve Cryptography
30. 2014-15, Second Semester, Mantinder Jit Singh: Study and Design of Different Type of Wavelets and their Applications
31. 2014-15, Second Semester, Arpit Bhutani: Study and Design of Different Type of Wavelets and their Applications
32. 2014-15, Second Semester, Sadhana Srinivasan: Study of Extended Real-Valued Metric on Continuous Real Functions

Responsibilities at BITS Pilani, Pilani Campus, (21st July 2009 to 28th December 2015)

1. Seminar Coordinator Mathematics Department (From July 2011 to August 2012).
2. Disciplinary Committee (DC) (August 2013 - March 2014).
3. Departmental Committee for Academics (DCA) (August 2012 - August 2014).
4. Warden of Gandhi Bhawan from July 2014 to June 2015.
5. Nucleus Member : Instruction Division
6. Member of
7. (a) Department Research Committee (DRC) (Since September 2014)
8. (b) Academic Counselling Cell (ACC)
9. Warden Krishna Bhawan (Since November 2013).

Teaching at BITS Pilani (2009 – 2015)
1. Mathematics-I (Calculus, Thomas, Calculus 11th Edition)
2. Mathematics-II (Linear Algebra: An Applied First Course, Kolman and Hill & Complex Variables and Applications: Churchill and Brown)
3. Mathematics-III (G. F. Simmons, Differential Equations with Applications and Historical Notes).
4. Numerical Analysis (Applied Numerical Analysis by Curtis F. Gerald, Patrich O. Wheatley Addison - Wesley, Numerical Analysis, Burden and Faires, Thomson Learning).
5. Elementary Real Analysis (Walter Rudin).
6. Engineering Mathematics
7. Engineering Mathematics II