

Dr. Naseer Ahmad Asif

Department of Mathematics, University of Management and Technology
CII Johar Town, 54770 Lahore, Pakistan

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Research & Teaching Interests

- Existence Theory for Differential Equations
- Functional Analytic Method for Differential Equations
- Polynomial Solutions for Partial Differential Equations
- Functional Analysis and Fixed Point Theory
- Degree Theory and Fixed Point Index Theory
- Computational Mathematics

Qualifications

PhD - Mathematics

2011

National University of Sciences and Technology (NUST), 44000 Islamabad, Pakistan

Thesis Title: *Existence and Multiplicity Results for Systems of Singular Boundary Value Problems*

Thesis Supervisor: Prof. Dr. Rahmat Ali Khan

Courses Studied:

CGPA Achieved 3.83/4.00

Real and Complex Analysis; Functional Analysis; Special Functions; Measure Theory; Fixed Point Theory; Algebra and Representation Theory of Groups; Differential Geometry; Computational Mathematics; Continuum Mechanics; Ordinary Differential Equations; Partial Differential Equations; Upper and Lower Solution Method for Differential Equations; Symmetry Method for Differential Equations; Quantum Mechanics

MSc - Applied Mathematics

2004

University of the Punjab, Lahore, Pakistan

Courses Studied:

Marks obtained 902/1200

Real Analysis; Complex Analysis; Differential Geometry; Topological Spaces; Functional Analysis; Mechanics; Vector and Tensor Analysis; Group Theory; Ring Theory; Linear Algebra; Methods of Mathematical Physics; Numerical Analysis; Special Theory of Relativity & Analytical Dynamics; Measure Theory; Special Functions; Computer Languages

BSc - Mathematics & Statistics

2001

Govt. F.C. College, Lahore, Pakistan

Professional Experience

Assistant Professor

August 2013 - Present

Department of Mathematics, School of Science and Technology, University of Management and Technology (UMT), Lahore, Pakistan

September 2011 - May 2013

School of Natural Sciences (SNS), formerly known as, Centre for Advanced Mathematics and Physics (CAMP), NUST, Islamabad, Pakistan

Research Associate

October 2009 - March 2010, July 2010 - December 2010

Worked as Research Associate at CAMP, NUST, Islamabad, Pakistan

Courses Taught at Post-graduate level

Differential Equations; Fixed Point Theory

Courses Taught at Under-graduate level

Real Analysis; Numerical Analysis; Linear Algebra; Differential Equations; Calculus-I; Calculus-II; Applied Calculus; Probability Theory; Mathematical Statistics

Curriculum Development:

- MATH - 212 Real Analysis, Spring 2014, UMT, Lahore, Pakistan
- MATH - 532 Fixed Point Theory, Fall 2014, UMT, Lahore, Pakistan

Postgraduate Supervision:

- PhD thesis of Mr. Imran Talib with title: "*Existence and Approximation Results for Solutions of Differential Equations*", UMT, Lahore, Pakistan (in progress)
- MS thesis of Ms. Marfiah Alam with title: "*Symmetric Solutions for a Second Order Boundary Value Problems*", UMT, Lahore, Pakistan (in progress)
- MS thesis of Mr. Abdul Aleem with title: "*Positive Solutions for a System of Fractional Differential Equations with Coupled Integral Boundary Conditions*", UMT, Lahore, Pakistan (in progress)
- MS thesis of Mr. Mubarak Saleem with title: "*Some Results for a Class of Second Order Differential Inclusions*", UMT, Lahore, Pakistan (in progress)
- MS thesis of Mr. Syed Kamran Ali Galani with title: "*Meson-meson scattering using the improved Cornell potential*", UMT, Lahore, Pakistan (in progress)
- MPhil thesis of Mr. Muhammad Ahsan with title: "*Multiplicity of Solutions of Third Order Boundary Value Problems By Leggett-Williams Theorem*", Minhaj University, Lahore, Pakistan. September 18, 2015
- MPhil thesis of Ms. Hina Bashir with title: "*Lower and Upper Solution Method for Singular System*", NUST, Islamabad, Pakistan. June 27, 2013

Thesis Reviewed:

- MS thesis of Ms. Saima Ijaz with title: “*Slip effect on the MHD channel flow in the presence of across mass transfer phenomenon*”, UMT, Lahore, Pakistan 2014
- MPhil thesis of Ms. Daniah Tahir with title: “*Control of Hepatitis C virus Infection; A model that includes effects of vaccination and waning immunity*”, NUST, Islamabad, Pakistan 2013
- MPhil thesis of Ms. Rafay Mustafa with title: “*Experimental Behaviour of Some Symplectic and G-Symplectic Methods for the Numerical Solution of Conservative Systems*”, NUST, Islamabad, Pakistan 2013

Research Articles

1. **N.A. Asif**, I. Talib and C. Tunc, Existence of solution for first-order coupled system with nonlinear coupled boundary conditions, *Boundary Value Problems*, (2015) 2015:134, pages 9.
2. **N.A. Asif**, Positive Solutions of a Singular System with Two Point Coupled Boundary Conditions, *American Journal of Applied Mathematics*, Special Issue: Proceedings of the 1st UMT National Conference on Pure and Applied Mathematics (1st UNCPAM 2015). Volume 3, No. 3-1 (2015) 19–24.
3. **N.A. Asif**, I. Talib, Existence of Solutions to a Second Order Coupled System with Nonlinear Coupled Boundary Conditions, *American Journal of Applied Mathematics*, Special Issue: Proceedings of the 1st UMT National Conference on Pure and Applied Mathematics (1st UNCPAM 2015). Volume 3, No. 3-1 (2015) 54–59.
4. **N.A. Asif** and R.A. Khan, Positive solutions to singular system with four-point coupled boundary conditions, *Journal of Mathematical Analysis and Applications*, 386 (2012) 848 – 861.
5. **N.A. Asif**, R.A. Khan and P.W. Elloe, Existence of positive solutions to a singular system of boundary value problems, *Dynamics of Continuous, Discrete and Impulsive Systems, Series A: Mathematical Analysis*, Volume 18, Number 3 (2011) 353 – 361.
6. Mujeeburrehman, R.A. Khan and **N.A. Asif**, Three point boundary value problems for nonlinear fractional differential equations, *Acta Mathematica Scientia*, 31 (2011) 1337 – 1346.
7. **N.A. Asif**, R.A. Khan and J. Henderson, Existence of positive solutions to a system of singular boundary value problems, *Dynamic Systems and Applications*, 19 (2010) 395 – 404.
8. **N.A. Asif**, P.W. Elloe and R.A. Khan, Positive solutions for a system of singular second order nonlocal boundary value problems, *Journal of the Korean Mathematical Society*, 47 (5) (2010) 985 – 1000.
9. **N.A. Asif** and R.A. Khan, Multiplicity results for positive solutions of a coupled system of singular boundary value problems, *Communications on Applied Nonlinear Analysis*, 17 (2) (2010) 53 – 68.
10. **N.A. Asif** and R.A. Khan, Positive solutions for a class of coupled system of singular three point boundary value problems, *Boundary Value Problems*, Volume 2009, Article ID 273063, pages 18.
11. R.A. Khan and **N.A. Asif**, Positive solutions for a class of singular two point boundary value problems, *The Journal of Nonlinear Science and Applications*, 2 (2009), No. 2, 126 – 135.

Conferences & Workshops

- June 4-6, 2015: CASM Conference on Qualitative and Quantitative Techniques for Differential Equations and Applications, Centre for Advanced Studies in Mathematics (CASM), Lahore University of Management Sciences (LUMS), Lahore, Pakistan
- April 1-4, 2015: IMPF 7 (2015) - 7th International Meeting on Particles and Fields, Centre for High Energy Physics, University of the Punjab, Lahore, Pakistan
- March 7-8, 2015: 1st UNCPAM - 1st UMT National Conference on Pure and Applied Mathematics, Department of Mathematics, UMT, CII Johar Town, 54770 Lahore, Pakistan
- January 27-30, 2014: S ∂ EA-II, Symmetries, Differential Equations and Applications, SNS, NUST, Islamabad, Pakistan
- October 2013: Workshop on "High Achievers", Academic Development Centre, UMT, Lahore, Pakistan
- January 21-24, 2013: Training on "Methods of Instruction", Professional Development Center (PDC), NUST, Islamabad, Pakistan
- November 17-19, 2011: CAMP Conference on Mathematical Sciences, CAMP, NUST, Islamabad, Pakistan
- March 17-18, 2011: Workshop on "Effective Communication Skill", PDC, NUST, Islamabad, Pakistan
- July 26-27, 2010: Summer Conference in Mathematics, CASM, LUMS, Lahore, Pakistan
- August 11-13, 2008: International Conference on Recent Developments in Fluid Mechanics, Quaid-i-Azam University, Islamabad, Pakistan
- June 7-9, 2007: All Pakistan Mathematical Conference, Pakistan Academy of Sciences, Islamabad, Pakistan
- May 8-9, 2007: TechnoMoot 2007 – Conference on Information Technology and Mathematics, Comsats Institute of Information Technology, Abbotabad, Pakistan
- June 10-11, 2006: Workshop on "Mathematics of Risk Management", CASM, LUMS, Lahore, Pakistan
- October 4-6, 2004: 2nd Symposium on Cosmology, Relativity and Astrophysics, CAMP, NUST, Islamabad, Pakistan

Professional Activities

- March 7-8, 2015: Organizing secretary of 1st UNCPAM 2015 – 1st UMT National Conference on Pure and Applied Mathematics, Department of Mathematics, UMT, Lahore, Pakistan
<http://sst.umd.edu.pk/newsite/UNCPAM-15/UNCPAM-poster.pdf>
- November 2014 – Present: President of Al-Khwarzmi Mathematical Society, Department of Mathematics, UMT, Lahore, Pakistan
<http://sst.umd.edu.pk/newsite/Announcements/Nov2014/society.html>
- October 2013 – Present: Member of the Departmental Graduate Committee, Department of Mathematics, UMT, Lahore, Pakistan

Computer Skills

- Mathematica, C++ and Fortran for computation and programming
- Expertise in using educational technologies like LMS and Moodle
- Scientific Work Place, and \LaTeX for documents preparation
- Microsoft Office (Word, PowerPoint, Excel)

Research Collaboration

- **Prof. Dr. Cemil Tunc**
Department of Mathematics
Faculty of Science
Yuzuncu Yil University
65080 Kampus, Van, Turkey
- **Prof. Dr. Johnny Henderson**
Department of Mathematics
Baylor University
One Bear Place # 97328
Waco, TX 76798-7328, USA
- **Prof. Dr. Mohammad Mehdi Rashidi**
Shanghai Key Lab of Vehicle Aerodynamics
and Vehicle Thermal Management Systems
Tongji University
Jiading District, Shanghai
China

References

- **Prof. Dr. Rahmat Ali Khan**
Department of Mathematics
University of Malakand, Malakand
Khyber Pakhtoonkhwa, Pakistan
- **Prof. Dr. Faiz Ahmad**
School of Natural Sciences
National University of Sciences
and Technology, Islamabad, Pakistan
- **Prof. Dr. Juan J. Nieto**
Institute of Mathematics
University of Santiago de Compostela
E-15782 Santiago de Compostela
Spain
- **Prof. Dr. Shahid S. Siddiqi**
Department of Mathematics
University of the Punjab, Quaid-i-Azam
Campus, 54590 Lahore, Pakistan
- **Dr. Majid Bhinder**
Postdoctoral Research Fellow
Beaufort Research, Hydraulics and Maritime
Research Centre, University College Cork,
Youngline Industrial Estate, Pouladuff Road,
Cork, Ireland