

Asim Naseem



Assistant Professor



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Google Scholar: <https://scholar.google.com/citations?hl=en&user=egaPL1sAAAAJ>

My academic work combines research and teaching in algebra and graph theory. My research contributions include studies of valued fields and Galois Theory as well as graph-theoretic invariants with applications to chemical graph theory and complex networks, resulting in 21 peer-reviewed publications. With more than 15 years of teaching experience, I have taught a broad range of mathematics courses at both undergraduate and graduate levels. I have successfully supervised 01 PhD student, 25 MPhil students, and 48 BS Mathematics projects across diverse areas of pure and applied mathematics.

EDUCATION

- **PhD Mathematics** | September 2004 – February 2009
Abdus Salam School of Mathematical Sciences, Government College University Lahore, Pakistan
- **Master of Science in Computational Mathematics** | September 2002 – August 2004
University of Engineering and Technology (UET), Lahore, Pakistan
- **Microsoft Certified Professional MCP** | April 2001
Certification: *Designing and Implementing Desktop Applications using MS VB 6.0*
- **Master of Computer Science** | September 1999 – December 2000
The National College (NCCS), Lahore, Pakistan

WORK HISTORY

- **Assistant Professor** | September 2009 – Present
Department of Mathematics, Government College University Lahore, Pakistan
- **Postdoctoral Fellow** | September 2011 – March 2012
University of Saskatchewan, Saskatoon, Canada

CURRICULUM DEVELOPMENT

- Designed a graduate-level course, **Valuation Theory and Its Applications**, covering absolute values and valuations, with introductory applications to number theory and algebraic geometry.
- Develop course content for an introductory graduate-level course, **Algebraic Number Theory**, covering algebraic number fields, rings of integers, ideal factorization, unit groups, and applications to Diophantine equations.
- Designed contents for a graduate-level course, **Galois Theory**, covering field extensions, splitting fields of polynomials, normal and separable extension, Galois extension characterizations and Fundamental theorem of Galois theory.

TEACHING EXPERIENCE

Taught the following courses at undergraduate/graduate level on multiple occasions:

- Calculus I-III
- Number Theory
- Linear Algebra
- Abstract Algebra (Groups, rings and fields)
- Rings and Modules
- Graph Theory and its applications
- Algebraic Number Theory
- Valuation Theory and its Applications
- Galois Theory
- Advanced Algebra

PUBLICATIONS

1. Exploring the physical properties of polyhydroxybutyrate via eccentricity-based topological indices, *Chemical Papers*, **79**(9), 5785–5798, 2025. [Impact Factor: 2.5; SJR Rank: Q3; HEC Category: X]
2. Physical analysis of eccentricity-based topological indices for Hex-derived networks, *Discrete Mathematics, Algorithms and Applications*, **17**(2), 2025. [Impact Factor: 1.200; SJR Rank: Q3; HEC Category: X]
3. Characterizing superlattice topologies via fifth M-Zagreb polynomials and structural indices, *European Physical Journal Plus*, **138**:1025, 2023. [Impact Factor: 3.400; SJR Rank: Q2; HEC Category: W]
4. Further results on radio number of wedge sum of graphs, *Ars Combinatoria*, **156**, 13-23, 2023. [Impact Factor: 0.263; SJR Rank: Q4; HEC Category: Y]
5. Combinatorial Bounds of the Regularity of Elimination Ideals, *Ars Combinatoria*, **156**, 25-34, 2023. [Impact Factor: 0.263; SJR Rank: Q4; HEC Category: Y]
6. Effects of exponential heating on double-diffuse free convection flows on a moving vertical plate, *Mathematical Reports*, **24** (3), 481-503, 2022. [Impact Factor: 0.441; SJR Rank: Q4; HEC Category: Y]
7. The radio number for wedge sum of graphs, *Ars Combinatoria*, **151**, 109-122, 2020. [Impact Factor: 0.263; SJR Rank: Q4; HEC Category: Y]
8. Fixed Point Problems on Generalized Metric Spaces in Perov's Sense, *Symmetry*, **12**, 856, 2020. [Impact Factor: 2.143; SJR Rank: Q3; HEC Category: W]
9. Hosoya and Harary polynomials of hourglass and rhombic Benzenoid Systems, *Journal of Chemistry*, **2020**, 2020. [Impact Factor: 1.790; SJR Rank: Q2; HEC Category: W]
10. MHD Natural Convection Boundary layer Flow Over a Semi-Infinite Heated Plate with Arbitrary Inclination, *Discrete and Continuous Dynamical Systems Series S*, **13**(3), 1007-1015, 2020. [Impact Factor: 1.233; SJR Rank: Q2; HEC Category: W]
11. On Some New Multivalued Results in the Metric Spaces of Perov's Type, *Mathematics*, **8**(3), 438, 2020. [Impact Factor: 1.747; SJR Rank: Q2; HEC Category: W]
12. Topological invariants for the line graphs of some classes of graphs, *Open Chemistry*, **17**, 1483–1490, 2019. [Impact Factor: 1.216; SJR Rank: Q2; HEC Category: W]
13. Topological Indices of Para-line Graphs of V-Phenylenic Nanostructures, *Open Mathematics*, **17**, 260–266, 2019. [Impact Factor: 0.773; SJR Rank: Q3; HEC Category: W]
14. Distance and adjacency energies of multi-level wheel networks, *Mathematics*, **7**(43), 2019. [Impact Factor: 1.747; SJR Rank: Q3; HEC Category: W]

15. Topological Indices of m th Chain Silicate Graphs, *Mathematics*, **7**(42), 2019. [Impact Factor: 1.747; SJR Rank: Q3; HEC Category: W]
16. Fixed Points Results in Algebras of Split Quaternion and Octonion, *Symmetry*, **10**(9), 405, 2018. [Impact Factor: 2.143; SJR Rank: Q3; HEC Category: W]
17. The Radio Number of Edge-Joint Graphs, *Ars Combinatoria*, **139**, 337-351, 2018. [Impact Factor: 0.192; SJR Rank: Q3; HEC Category: W]
18. Optimal approximation in henselian fields, *Science International (Lahore)*, **27**(1), 7-9, 2015. [Impact Factor: -; SJR Rank: -; HEC Category: -]
19. Defects of algebraic function fields, completion defects and defect quotients, in *Valuation Theory in Interaction*, EMS Series of Congress Reports, EMS Press, 320-350, 2014. [Impact Factor: -; SJR Rank: -; HEC Category: -]
20. A Galois Theory for the Field Extension $K((X))/K$, *Glasgow Mathematical Journal*, **52**(3), 447-451, 2010. [Impact Factor: 0.408; SJR Rank: Q2; HEC Category: W]
21. Extensions of discrete finite rank valued fields, *Bulletin Mathématique*, **59**, 245-252, 2008. [Impact Factor: -; SJR Rank: -; HEC Category: -]

STUDENTS SUPERVISION

PHD SUPERVISION

- **Usman Babar** (2025)
A Study of Eccentricity-Based Invariants of Chemical Network Models
- **Laraib Hayat** (In Progress)
Intuitionistic fuzzy credibility implicative ideals in BCK-Algebras with Applications in Decision-making
- **Fatima Rasool** (In Progress)
Linear Diophantine Fuzzy BCC ideals in BCC-Algebras with Applications in Decision making
- **Zaid Munawar** (In Progress)
Monogeneity of Number Fields Generated by Certain Polynomial Families

MPHIL SUPERVISION

- Supervised 25 MPhil Mathematics Students at GC University Lahore, Pakistan

BS SUPERVISION:

- Supervised 48 BS Mathematics Students at GC University Lahore, Pakistan

Talks/Seminars/Paper Presentations

- *On the radio number of a graph*, Unpacking Mathematics: Weekly Seminar Series, Department of Mathematics, GC University Lahore (2019)
- *The completion defect and defects of valued function fields*, The Eleventh Colloquiumfest, University of Saskatchewan, Saskatoon, Canada (2012)
- *Introduction to Valuation Theory*, Weekly Seminar Series, Department of Mathematics, GC University Lahore (2011)
- *A Galois theory for the extension $K((X))/K$* , Workshop on Valuation theory in positive characteristic, University of Katowice, Poland (2010)
- *A Galois theory for the extension $K((X))/K$* , Joint conferences on Algebra, Logic and Number theory, Bukowina Tatrzańska, Poland (2010)

- *On polycomplete valued fields*, Abdus Salam School of Mathematical Sciences, Lahore, Pakistan (2009)
- *Extensions of discrete finite rank valued fields*, 4th International Conference on 21st Century Mathematics, Abdus Salam School of Mathematical Sciences, Lahore, Pakistan (2009)
- *Finite co-extensions of complete discrete valued fields*, LUMS 2nd International Conference on Mathematics and its applications in Information Technology, LUMS, Pakistan (2008)
- *On some closed subfields of $K((X))$* , 3rd International Conference on 21st Century Mathematics, Abdus Salam School of Mathematical Sciences, Lahore, Pakistan (2007)

Academic Service

- **Coordinator, PhD Program** (2018 – Present), Department of Mathematics, GC University Lahore
- **Coordinator, MPhil Program** (2025 – Present), Department of Mathematics, GC University Lahore
- **Member, Board of Studies** (2018 – 2021 & 2025 – Present), Department of Mathematics, GC University Lahore
- **Advisor, Chawala Mathematical Society** (2018 – Present), Department of Mathematics, GCU Lahore
- **Timetable In-charge** (2025 – Present), Department of Mathematics, GC University Lahore
- **Seminars In-Charge** (2017 – 2018), Department of Mathematics, GC University Lahore
- **Computer Lab In-Charge** (2009 – 2011), Department of Mathematics, GC University Lahore

Workshop / Conference Organization

- **Organizing Committee Member**
New trends in Mathematics and Modern Sciences, GC University Lahore, Dec. 01, 2025
- **Organizing Committee Member**
International Conference on Mathematics and Its Applications, GC University Lahore, Nov. 13–15, 2018
- **Organizing Committee Member**
International Conference on Mathematics and Its Applications, GC University Lahore, Nov 13–15, 2017
- **Secretary**
One Day Workshop on Soft Set Theory and Its Applications, GC University Lahore, May 23, 2017

References

- **Prof. Dr. Sever Angel Popescu**
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Technical University of Civil Engineering, Bucharest, Romania
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- **Prof. Dr. Akhlaq Ahmad Bhatti**
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National University of Computer & Emerging Sciences, Lahore, Pakistan
Email: akhlaq.ahmad@nu.edu.pk
- **Dr. Imran Anwar**
Associate Professor, Department of Mathematics
Lahore University of Management Sciences (LUMS), Lahore, Pakistan
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