

Dr. Tayyaba Shabbir

Email: tshabbir80@gmail.com | Phone: +966 583078808 |

WhatsApp: +92 3149793430

Location: Al Majmaah, Saudi Arabia



Professional Profile

Ph.D. in Mathematics with specialization in Fluid Mechanics, Numerical Analysis, and Computational Mathematics. More than five years of teaching experience across university and secondary education levels. Experienced in teaching Calculus, Differential Equations, Linear Algebra, Numerical Analysis, Applied Mathematics, and IB Mathematics. Strong research background in mathematical modelling, non-Newtonian fluid mechanics, and numerical simulation.

Academic Qualifications

- Ph.D. in Mathematics, COMSATS University Islamabad (2015-2021)
- M.Phil. in Mathematics, National University of Sciences and Technology (NUST) (2013-2015)
- BS Mathematics, International Islamic University Islamabad (2008-2012)

Teaching Experience

Mathematics Lecturer, Rowad Alkhaleej International Schools, Dammam, Saudi Arabia (2022-2023)

- Lesson planning, assessment design, quizzes, assignments, and student mentoring.

Mathematics

Lecturer, International Islamic University Islamabad (2016-2018)

- Taught undergraduate mathematics courses and supervised academic activities.

Mathematics Lecturer, Spring Field Public School & College, Rawalpindi (2012-2013)

Courses Taught

Calculus I & II, Differential Equations, Linear Algebra, Numerical Analysis, Fluid Mechanics, Heat Transfer, College Mathematics, Pre-calculus, and IB Mathematics.

Research Interests

Fluid Mechanics, Numerical Analysis, Computational Mathematics, Mathematical Modelling, Non-Newtonian Fluid Flow, Differential Equations, Scientific Computing, Applied Mathematics.

Research Experience

Conducted doctoral research on non-Newtonian fluid flow over stretching and curved surfaces using Shooting Method, RK4 Method, and Keller Box Scheme. Developed MATLAB algorithms for numerical solutions of nonlinear differential equations.

Technical Skills

MATLAB, Maple, LaTeX, C++, Scientific Computing, Numerical Analysis, Keller Box Method, Shooting Method, RK4 Method, Microsoft Office Suite.

Academic Responsibilities

Course planning, lecture delivery, curriculum development, assessment design, student mentoring, quizzes, assignments, examinations, and academic quality assurance.

Publications

1. Modelling and Numerical Simulation of Micropolar Fluid over a Curved Surface: Keller Box Method (2020).
2. Modelling and Numerical Computation for Flow of Micropolar Fluid Towards an Exponential Curved Surface: A Keller Box Method (2021).
3. Numerical Study of Carreau Fluid Flow along an Exponential Curved Stretching Surface (2024).
4. Study of the Carreau Fluid over a Linearly Curved Stretching Sheet: A Numerical Approach (2024).

Professional References

Prof. Saleem Asghar, COMSATS University Islamabad - sasghar@comsats.edu.pk

Prof. Shams ul Qamar, COMSATS University Islamabad - shamsul.qamar@comsats.edu.pk