Department of Mathematics
Faculty of Science / University of Peradeniya

Dr. M. T. M. Dewasurendra

Ph. D., M. Sc.(Central Florida, USA), M. Sc. (North Florida, USA)

Senior Lecturer

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About Me

Dr. M. T. M. Dewasurendra is a Senior Lecturer in Mathematics at the University of Peradeniya, Sri Lanka. He obtained his M.Sc. degree from the University of North Florida, USA, and his Ph.D. in Mathematics from the University of Central Florida, USA.

His research interests include nonlinear differential equations, dynamical systems, mathematical modeling, perturbation methods, climate modeling, and applied mathematics. He is also actively engaged in mathematics education research, particularly in the study of students' conceptual understanding of fundamental mathematical concepts. His publications in this area include "Basic Mental Models of the Definite Integral: Conceptual Understanding of Undergraduate Students in India and Sri Lanka."

Dr. Dewasurendra has successfully supervised and co-supervised Ph.D. and M.Phil. students in mathematics and related fields. His recent research activities extend to interdisciplinary domains, including heritage preservation, sustainable development, MSME awareness and development, and mathematical modeling of socio-economic systems. His latest publications include "Modeling and Semi-Analytical Solution for Immiscible and Miscible Fingers Formation During Enhanced Oil Recovery," which demonstrates the application of advanced mathematical modeling techniques to complex industrial and energy-related problems.

In addition to his research contributions, Dr. Dewasurendra has extensive experience in teaching, curriculum development, postgraduate education, and academic administration. He actively collaborates with national and international researchers on projects that apply advanced mathematical and computational methods to address challenges in science, engineering, education, sustainability, and community development.

Higher Education Qualifications

PhD	MSc	BSc
University of Central Florida USA (2019)	University of North Florida USA (2013)	University of Peradeniya Sri Lanka (2009)

Awards, Scholarships, Memberships & Fellowships

- Life Member, Sri Lanka Association for the Advancement of Science (SLAAS)
- University Reseach Grant 2024
- The Award of Excellence in Research, Faculty of Science, University of Peradeniya 2025
- The Award of Excellence in Research, Faculty of Science, University of Peradeniya 2024
- The Award of Excellence in Research, Faculty of Science, University of Peradeniya 2023
- The Award of Excellence in Teaching, Faculty of Science, University of Peradeniya 2022
- The Award of Excellence in Research, Faculty of Science, University of Peradeniya 2021
- The Award of Excellence in Teaching, Faculty of Science, University of Peradeniya 2021
- Honorary mention for "Armstrong GTA Award for distinguished teaching 2019(Department of Mathematics, University of Central Florida)
- Graduate Research Excellence Award in Mathematics 2018 (Department of Mathematics, University of Central Florida)
- Outstanding Graduate Math Student Award 2013(University of North Florida)
- International Student Merit Academic Award 2013(University of North Florida)
- Graduate Presentation Fellowship 2019 (University of Central Florida)
- Travel Grant for Joint Mathematics Meetings 2019 (American Mathematical Society)
- American Mathematical Society, 2013
- Pi Mu Epsilon, 2011
- University of Peradeniya Science Alumni Association, 2020

Positions Held

- Senior Lecturer(Grade II), Department of Mathematics, University of Peradeniya- (July 2021 - Present)
- Coordinator IQAC, Center for Distance and Cotinuing Education CDCE, UoP- (2024 - Present)
- Coordinator SOR Degree Programme, University of Peradeniya- (February, 2026-Present)
- Coordinator (Mathematics) Science Education Unit, University of Peradeniya- (2026 - Present)
- Wardan, Arunachalam Hall- (2022 - Present)
- President, University of Peradeniya Science Teachers Association UPSTA- (2024 - 2025)
- Coordinator Training, Centre for Distance and Continuing Education, UoP- (November 2022 - November 2025)
- Senior Treasurer Young Researchers' Forum, Postgraduate Institute of Science, University of Peradeniya- (April 2022 - March 2025)
- Secretary, University of Peradeniya Science Alumni Association(UPSAA)- (February 2020 - December 2021)
- Fundraising committee chair, University of Peradeniya Science Alumni Association(UPSAA)- (2021- Present)
- Senior Treasurer Science Student Union- (February 2022 - July 2023)
- Volunteer Senior Student Counselor- (February 2022 - 2023)
- Chief Examiner for G.C.E. (A/L) Examination- (2020/21, 2021/22, 2023/24)
- Visiting Lecturer, Post Graduate Institute of Science (PGIS), University of Peradeniya- (2020 - Present)
- Graduate Teaching Associate, Department of Mathematics, University of Central Florida- (January 2017- August 2019)
- Graduate Teaching Assistant, Department of Mathematics, University of Central Florida- (August 2013- December 2016)
- Graduate Teaching Assistant, Department of Mathematics and Statistics, University of North Florida- (August 2011- May 2013)

My Teachings

- MAT3053: Fluid Mechanics I
- MAT4053: Fluid Mechanics II
- MT1042: Vector Methods
- MT106: Classical Mechanics I
- MT203: Differential Equations
- MT205: Classical Mechanics II
- MT314: Network Optimization Theory

Research Interests (Research Fields/ Projects)

Fluid Dynamics, Dynamical Systems, Mathematical Modeling, Computational Mathematics

Ongoing Research and Projects

- **Method of Directly Defining the inverse Mapping for Partial Differential Equations**
- **Directly Defining the inverse Mapping Method for the Propagation of Harmonic Waves in a Nonlinear Generalized Magneto-thermo-elasticity**
- **Fuzzy Differential Equations and Applications**
- **Slip Conditions on Nanofluids when traveling through parallel Plates**

Key Publications

International Journal of Modelling and Simulation(Taylor and Francis) - (2023)

Modeling and semi-analytical solution for immiscible and miscible fingers formation during enhanced oil recovery

Computational and Applied Mathematics (Springer Link) - (2021)

A Method of Directly Defining the inverse Mapping for a nonlinear partial differential equation and for systems of nonlinear partial differential equations

Computers & Mathematics with Applications (ELSEVIER) - (2021)

Semi-analytical method for propagation of harmonic waves in nonlinear magneto-thermo-elasticity

Conferences

Proceedings of the Ruhuna International Science and Technology Conference

HELD AT : Ruhuna University - (2021)
TOPIC : *Application of the Method of Directly Defining the Inverse Mapping to Fingering Phenomenon in Oil Industry*

Proceedings of the PGIS Research Congress

HELD AT : University of Peradeniya - (2020)
TOPIC : *Non-linear Dispersion of a chemical pollutant into a river with non-linear initial flow*

Joint Mathematical Meetings 1145

HELD AT : Baltimore, MD - (2019)
TOPIC : *Optimal Semi-analytical Method to solve Coupled Nonlinear Differential Equations Arising in Epidemiology*

American Mathematical Society meeting 1133

HELD AT : Orlando, FL - (2017)
TOPIC : *A method of directly defining the inverse mapping for solutions of coupled systems of nonlinear differential equations*

Joint Mathematical Meetings 1125

HELD AT : Atlanta, GA - (2017)
TOPIC : *A Method of Directly Defining the Inverse Mapping for Solutions of Coupled Systems of Nonlinear Differential Equations*

My Publications

Please goto the website.

https://sci.pdn.ac.lk/maths/staff/Mangalagama-Dewasurendra

