



Prof. Ahmad Mohammad Ibrahim Qazza

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dr\_qazza@yahoo.co.uk

## Applied Mathematics/ Differential Equation

**Academic Rank:** Professor of Applied Mathematics

### Membership:

|    |                                                                                            |                     |
|----|--------------------------------------------------------------------------------------------|---------------------|
| 1. | American Mathematical Society(AMS).<br>Providence, Rhode Island, US<br>Member ID: QZAHMAA: | 2020- until to date |
| 2. | Society for Industrial and Applied Mathematics<br>Member Number: 001050695.                | 2020- until to date |
| 3. | Saudi Association for Mathematical Sciences<br>Membership ID: 1022195623                   | 2024- until to date |

### Membership:

|     |                                                                                                                   |
|-----|-------------------------------------------------------------------------------------------------------------------|
| 1.  | Representative of the College of Science in the University Council (Zarqa University)                             |
| 2.  | Representative of the College of Science and Information Technology in the University Council (Jadara University) |
| 3.  | Representative of the College of Science and Information Technology in the University Council (Irbid University)  |
| 4.  | Member of the quality council - Zarqa University (Many times)                                                     |
| 5.  | Member of the quality council - Jadara University (Many times)                                                    |
| 6.  | Member of the efficiency committee – Zarqa University (Many times)                                                |
| 7.  | Member of the science faculty council– Zarqa University (Many times)                                              |
| 8.  | Member of the science and Information Technology faculty council– Jadara University (Many times)                  |
| 9.  | Member of the science and Information Technology faculty council– Irbid University (Many times)                   |
| 10. | Head of, quality Committee of science faculty (Zarqa, Jadara, Irbid)                                              |
| 11. | Head of, Social Committee (Jadara, Irbid)                                                                         |
| 12. | Member of , Social Committee (Zarqa)                                                                              |
| 13. | Head of, Qualifying exam committee (Zarqa, Jadara, Irbid)                                                         |



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|-----|--------------------------------------------------------------------------------------------------------------------------------------|
| 14. | Head of, Examinations Committee (Zarqa, Jadara, Irbid)                                                                               |
| 15. | Head of, Development and Planning Committee (Zarqa, Jadara, Irbid)                                                                   |
| 16. | Head of, Study Schedule Committee (Zarqa, Jadara, Irbid)                                                                             |
| 17. | Member of postgraduate studies committee (Zarqa University)                                                                          |
| 18. | Member of Research and Scientific committee (Zarqa, Jadara, Irbid)                                                                   |
| 19. | Member of the Organizing Committee of The 6th International Arab Conference on Mathematics and Computations, Zarqa University, 2019. |
| 20. | Co-Chair of The 7th International Arab Conference on Mathematics and Computations, Zarqa University, 2022.                           |
| 21. | Co-Chair of The 8th International Arab Conference on Mathematics and Computations, Zarqa University, 2023.                           |
| 22. | Head of Mathematics department/ Jadara University Sep 2010 – 2017.                                                                   |
| 23. | Vice Dean in Faculty of Science / Zarqa University Sep 2018- 2023.                                                                   |

## Qualifications:

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|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>Ph.D. in Differential Equation 2000, Faculty of Mechanics and Mathematics, Department of Differential Equation, Kazan State University (Kazan Federal University), Russia:</p> <ul style="list-style-type: none"> <li>Degree Specialization: Differential equations.</li> <li>Title of Ph.D., Thesis: <i>Reduction of Dirichlet problem and its generalization for elliptical equations to the boundary problems for holomorphic function.</i></li> </ul> |
| 2 | <p>M.Sc. in Differential Equation 1996, Faculty of Mechanics and Mathematics, Department of Differential Equation, Kazan State University (Kazan Federal University), Russia:</p> <ul style="list-style-type: none"> <li>Degree Specialization: Differential equations.</li> <li>Title of M.Sc., Thesis: <i>The application of integral transformation by Mellin's Nucleus in Bessel's theory.</i></li> </ul>                                                |

## Objective(s):

- Enhancing Research Capabilities:** To spearhead research initiatives that foster innovation in Applied Mathematics, particularly in the realm of Differential Equations. My intent is to publish in esteemed journals and collaborate with peers and industry experts to solve complex mathematical problems with real-world applications.
- Collaborating and Sharing Knowledge:** To establish a network of interdisciplinary collaborations that facilitate the exchange of knowledge, methodologies, and resources. By doing so, I aim to stay at the forefront of emerging trends and technologies.

3. **Enhancing Student Engagement:** To implement active learning strategies and experiential learning methods that can foster a stimulating educational environment. My goal is to create a holistic curriculum that not only imparts theoretical knowledge but also instills the skills necessary for students to excel in their future endeavors.
4. **Improving Curriculum Design:** To work collaboratively with educational stakeholders in revamping curriculum structures that are aligned with the demands of the modern world. My focus is to integrate technological tools and innovative teaching techniques to make the learning experience more effective and engaging.
5. **Preparing Students for the Future:** To guide students in their academic and career paths by offering mentorship and counseling services. I aspire to develop future leaders who can contribute positively to society and the scientific community at large.

### Area of Interest:

Fields of interest: Boundary Value Problems for PDEs of Mathematical Physics (Laplace equation, Helmholtz equation, heat equation, etc); Boundary Integral Equation Methods; Integral Representations for Solutions; integral equations with logarithmic and Cauchy kernels; boundary value problems for analytic complex functions; applications of boundary value problems to mathematical modelling in acoustics, fluid dynamics, physics and engineering; numerical methods; Fractional Integrals and Derivatives Theory and Applications.

### Teaching Experience:

| # | From | to   | Job title<br>Employer                                                                       |
|---|------|------|---------------------------------------------------------------------------------------------|
| 1 | 2004 | 2008 | Assistant professor<br>Department of Mathematics<br>Irbid National University/Irbid-Jordan. |
| 2 | 2008 | 2016 | Assistant professor<br>Department of Mathematics<br>Jadara University/Irbid-Jordan.         |
| 3 | 2010 | 2017 | Head of Math. Dept.<br>Department of Mathematics<br>Jadara University/Irbid-Jordan.         |
| 4 | 2016 | 2017 | Associate professor<br>Department of Mathematics<br>Jadara University/Irbid-Jordan.         |



|   |      |                 |                       |                                                                                                    |
|---|------|-----------------|-----------------------|----------------------------------------------------------------------------------------------------|
| 6 | 2017 | 2023            | Job title<br>Employer | Associate professor<br>Department of Mathematics<br>Zarqa University/Zarqa-Jordan.                 |
| 7 | 2018 | 2023            | Job title<br>Employer | Vice Dean of the faculty of science<br>Department of Mathematics<br>Zarqa University/Zarqa-Jordan. |
| 8 | 2023 | until<br>todate | Job title<br>Employer | Professor<br>Department of Mathematics<br>Zarqa University/Zarqa-Jordan.                           |

## Scholarships Received:

- Scholarship for the Ph.D. degree from Kazan State University, Russia.
- Scholarship for Bachelor degree from Ministry of Higher Education, Jordan.

**Other Things** Have been included among World's Top 2% Scientists List created by Scholars from Stanford University in 2024 and 2025.



**Qazza, Ahmad**  
Zarqa University

**Rank: 960617**

Main Field: Mathematics & Statistics  
 Sub Field: Applied Mathematics  
 Rank in the SubField: 377.0  
 H-index: 12, Hm-index: 7

Top 2% Listed Year(s): 2025, 2024  
"Single Year" Data


 The data is verified and sourced from ELSEVIER  
and Stanford University's Top 2% Scientists list.

[www.TopSciNet.com](http://www.TopSciNet.com)





## Academic Links:

- <https://scholar.google.com/citations?hl=ar&user=RouKrs4AAAAJ>
- <https://www.researchgate.net/profile/Ahmad-Qazza>
- <https://www.webofscience.com/wos/author/record/AAE-4117-2021>
- <https://orcid.org/my-orcid?orcid=0000-0002-8404-3897>
- <https://www.scopus.com/authid/detail.uri?authorId=56194015400>
- <https://www.linkedin.com/in/dr-ahmad-qazza-b313a282>
- <https://www.facebook.com/aqazza>
- <https://staff.zu.edu.jo/academic/index/4880>
- [https://twitter.com/a\\_qazza](https://twitter.com/a_qazza)
- <https://github.com/aqazza1>

## Publications:

| #  | Title                                                                                                                                                                                                 | Publisher                                                                  | Year | Issue |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------|-------|
| 1. | A Promising Cellulosic Natural Fiber as Prospective Reinforcement in Polymer Composites Structures                                                                                                    | SSRN                                                                       | 2025 |       |
| 2. | Roles of gammaAl <sub>2</sub> O <sub>3</sub> -H <sub>2</sub> O and gammaAl <sub>2</sub> O <sub>3</sub> -EG with thermal radiation on MHD flow across porous stretching-shrinking nonparallel channels | Case Studies in Thermal Engineering                                        | 2025 | 73    |
| 3. | Exploration of a New Approach Related to Atangana-Baleanu Derivatives for Solving Fractional Partial Differential Equations                                                                           | International Journal of Mathematical, Engineering and Management Sciences | 2025 | 10(4) |
| 4. | A comparative analysis of the impact of different treatments on Luffa Cylindrica fiber tensile properties                                                                                             | PLoS One                                                                   | 2025 | 20(7) |
| 5. | Fuzzy Generalization of ZZ Transform                                                                                                                                                                  | IAENG International Journal of Applied Mathematics                         | 2025 | 55(6) |
| 6. | Enhanced Solutions to Differential Equations Using Numerical Iterative Approach                                                                                                                       | IAENG International Journal of Applied Mathematics                         | 2025 | 55(6) |
| 7. | Linear Fractional Differential Equations for Modeling Nonlinear Hydro Environmental Phenomena                                                                                                         | Engineering Letters                                                        | 2025 | 33(6) |



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|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------|-------|
| 8.  | Dynamics of the Gierer--Meinhardt reaction--diffusion system: Insights into finite-time stability and control strategies                                  | Partial Differential Equations in Applied Mathematics   | 2025 | 14    |
| 9.  | Role of ternary hybrid nanoparticle and EMHD on boundary layer flow with stretching-shrinking plate: Optimization analyses using RMS                      | Results in Physics                                      | 2025 | 74    |
| 10. | Effects of Variable Thermo-Physical Characteristics on MHD Ternary Hybrid Second-Grade Nanofluid in Rotating Jeffery-Hamel Flow                           | International Journal of Thermofluids                   | 2025 | 27    |
| 11. | Conjugated Role of Variant-Shaped Ternary Hybrid Nanoparticles in MHD Jeffery--Hamel Water-EG Flows: New Mathematical Model                               | International Journal of Thermofluids                   | 2025 | 27    |
| 12. | Water Absorption and Mechanical Behavior of Hybrid Reinforced Epoxy LY556 Composites: Experimental Analysis                                               | Journal of Natural Fibers                               | 2025 | 22(1) |
| 13. | Finite time Stability and Synchronization of the Glycolysis Reaction-Diffusion model                                                                      | International Journal of Neutrosophic Science           | 2025 | 25(4) |
| 14. | Controllability of Intuitionistic Fuzzy Impulsive Neutral Integro-Differential Equations with Nonlocal Conditions                                         | International Journal of Analysis and Applications      | 2025 | 23    |
| 15. | Computational Solutions for Fractional Atangana- Baleanu PDEs: An Exploration of Sawi Transform and Homotopy Perturbation Method                          | Progress in Fractional Differentiation and Applications | 2025 | 11(1) |
| 16. | Advancing Solutions for Fractional Differential Equations: Integrating the Sawi Transform with Iterative Methods                                          | European Journal of Pure and Applied Mathematics        | 2025 | 18(1) |
| 17. | Solving System of ODEs and Analyzing Chemical Reactions                                                                                                   | Engineering Letters                                     | 2025 | 33(1) |
| 18. | A Novel Fractional Model Combined with Numerical Simulation to Examine the Impact of Lockdown on COVID-19 Spread                                          | Fractal and Fractional                                  | 2024 | 8(12) |
| 19. | Mittag-Leffler Functions and the Sawi Transform: A New Approach to Fractional Calculus                                                                    | WSEAS Transactions on Mathematics                       | 2024 | 23    |
| 20. | Leveraging artificial neural networks approach for thermal conductivity evaluation in porous rectangular wetted fins filled with ternary hybrid nanofluid | Journal of Radiation Research and Applied Sciences      | 2024 | 17(4) |



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|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------|--------|
| 21. | Exploring the dynamic behavior of the two-phase model in radiative non-Newtonian nanofluid flow with Hall current and ion slip effects                                                      | Journal of Radiation Research and Applied Sciences    | 2024 | 17(4)  |
| 22. | Neural network algorithms of a curved riga sensor in a ternary hybrid nanofluid with chemical reaction and Arrhenius kinetics                                                               | Journal of Radiation Research and Applied Sciences    | 2024 | 17(4)  |
| 23. | Synchronization in fractional discrete neural networks: constant and variable orders cases                                                                                                  | Arab Journal of Basic and Applied Sciences            | 2024 | 31(1)  |
| 24. | Stochastic modeling of influenza transmission: Insights into disease dynamics and epidemic management                                                                                       | Partial Differential Equations in Applied Mathematics | 2024 | 11     |
| 25. | Computational analysis of water-based silver, copper, and alumina hybrid nanoparticles over a stretchable sheet embedded in a porous medium with thermophoretic particle deposition effects | Nanotechnology Reviews                                | 2024 | 13(1)  |
| 26. | Stability exploration in fractional h-difference equations with incommensurate orders                                                                                                       | Arab Journal of Basic and Applied Sciences            | 2024 | 31(1)  |
| 27. | Investigating the Effectiveness of the Laplace Residual Power Series Approach for Volterra Integro-Differential Equation                                                                    | Engineering Letters                                   | 2024 | 32(8)  |
| 28. | Ramification of Hall effects in a non-Newtonian model past an inclined microchannel with slip and convective boundary conditions                                                            | Applied Rheology                                      | 2024 | 34(1)  |
| 29. | Composite Fractional Trapezoidal Rule with Romberg Integration                                                                                                                              | Computer Modeling in Engineering & Sciences           | 2024 | 140(3) |
| 30. | An efficient approximate analytical technique for the fractional model describing the solid tumor invasion                                                                                  | Frontiers in Physics                                  | 2024 | 12     |
| 31. | Innovative Approaches to Linear Volterra Partial Integro-Differential Equations: A Laplace Residual Power Series Perspective                                                                | IAENG International Journal of Computer Science       | 2024 | 51(7)  |
| 32. | On the thermal performance of radiative stagnation-point hybrid nanofluid flow across a wedge with heat source/sink effects and sensitivity analysis                                        | Frontiers in Materials                                | 2024 | 11     |
| 33. | Two-phase numerical simulation of thermal and solutal transport exploration of a non-Newtonian nanomaterial flow past a stretching surface with chemical reaction                           | Open Physics                                          | 2024 | 2(1)   |



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|-----|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------|--------|
| 34. | Optimized technique and dynamical behaviors of fractional Lax and Caudrey–Dodd–Gibbon models modeled by the Caputo fractional derivative | Partial Differential Equations in Applied Mathematics   | 2024 | 10     |
| 35. | Analyzing the Impact of Control Strategies on Visceral Leishmaniasis: A Mathematical Modeling Perspective                                | European Journal of Pure and Applied Mathematics        | 2024 | 17(2)  |
| 36. | Applying Conformable Double Sumudu – Elzaki Approach to Solve Nonlinear Fractional Problems                                              | Progress in Fractional Differentiation and Applications | 2024 | 10(2)  |
| 37. | Predicting the thermal distribution in a convective wavy fin using a novel training physics-informed neural network method               | scientific reports                                      | 2024 | 14(1)  |
| 38. | Exploring analytical results for (2+1) dimensional breaking soliton equation and stochastic fractional Broer-Kaup system                 | AIMS Mathematics                                        | 2024 | 9(5)   |
| 39. | A new approach in handling one-dimensional time-fractional Schrödinger equations                                                         | AIMS Mathematics                                        | 2024 | 9(5)   |
| 40. | Mathematical modeling and stability analysis of the novel fractional model in the Caputo derivative operator: a case study               | Heliyon                                                 | 2024 | 10(5)  |
| 41. | A new analytical algorithm for uncertain fractional differential equations in the fuzzy conformable sense                                | AIMS Mathematics                                        | 2024 | 9(4)   |
| 42. | Modeling COVID-19 spread and non-pharmaceutical interventions in South Africa: A stochastic approach                                     | Scientific African                                      | 2024 | 24     |
| 43. | Double Laplace Formable Transform Method for Solving PDEs                                                                                | Engineering Letters                                     | 2024 | 32(3)  |
| 44. | Effective methods for numerical analysis of the simplest chaotic circuit model with Atangana–Baleanu Caputo fractional derivative        | Journal of Engineering Mathematics                      | 2024 | 144(1) |
| 45. | A quintic B-spline technique for a system of Lane-Emden equations arising in theoretical physical applications                           | AIMS Mathematics                                        | 2024 | 9(2)   |
| 46. | Analyzing convex univalent functions on semi-infinite strip domain                                                                       | Journal of Mathematics and Computer Science             | 2024 | 33(3)  |
| 47. | A Fractional Study for Solving the SIR Model and Chaotic System                                                                          | IAENG International Journal of Applied Mathematics      | 2024 | 54(2)  |



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|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------|--------|
| 48. | Numerical Simulation of an Influenza Epidemic: Prediction with Fractional SEIR and the ARIMA Model                                                         | Applied Mathematics & Information Sciences       | 2024 | 18(1)  |
| 49. | Fractional Partial and Integral Differential Equations and Novel Conformable Double (Laplace -Sumudu) Transform                                            | Applied Mathematics & Information Sciences       | 2024 | 18(1)  |
| 50. | An application of Hayashi's inequality in numerical integration.                                                                                           | Open Mathematics                                 | 2023 | 21(1)  |
| 51. | A Generalized Hybrid Method for Handling Fractional Caputo Partial Differential Equations via Homotopy Perturbed Analysis                                  | WSEAS Transactions on Mathematics                | 2023 | 22     |
| 52. | Results Involving Partial Differential Equations and Their Solution by Certain Integral Transform                                                          | Computer Modeling in Engineering & Sciences      | 2023 | 138(2) |
| 53. | A New Computational Technique for Analytic Treatment of Time-Fractional Nonlinear Equations Arising in Magneto-Acoustic Waves                              | Mathematical Problems in Engineering             | 2023 | 2023   |
| 54. | A Numerical Solution of Generalized Caputo Fractional Initial Value Problems                                                                               | Fractal and Fractional                           | 2023 | 7(4)   |
| 55. | On the fibers of the tree products of groups with amalgamation subgroups                                                                                   | Journal of Applied Mathematics and Informatics   | 2023 | 41(6)  |
| 56. | ARA-Sumudu Method for Solving Volterra Partial Integro-Differential Equations                                                                              | Applied Mathematics and Information Sciences     | 2023 | 17(4)  |
| 57. | A Numerical Confirmation of a Fractional SEITR for Influenza Model Efficiency                                                                              | Applied Mathematics and Information Sciences     | 2023 | 17(5)  |
| 58. | A Perturbed Milne's Quadrature Rule for n-Times Differentiable Functions with Lp-Error Estimates                                                           | Axioms                                           | 2023 | 12(9)  |
| 59. | Application of the Optimal Homotopy Asymptotic Approach for Solving Two-Point Fuzzy Ordinary Differential Equations of Fractional Order Arising in Physics | Axioms                                           | 2023 | 12(4)  |
| 60. | A New Scheme for Solving a Fractional Differential Equation and a Chaotic System                                                                           | European Journal of Pure and Applied Mathematics | 2023 | 16(2)  |
| 61. | Effective transform-expansions algorithm for solving non-linear fractional multi-pantograph system                                                         | AIMS Mathematics                                 | 2023 | 8(9)   |
| 62. | ARA-Homotopy Perturbation Technique with Applications                                                                                                      | Applied Mathematics and Information Sciences     | 2023 | 17(5)  |



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|-----|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------|-------|
| 63. | New Bounds For The Eigenvalues Of Matrix Polynomials                                                              | European Journal of Pure and Applied Mathematics                           | 2023 | 16(2) |
| 64. | Further Accurate Numerical Radius Inequalities                                                                    | Axioms                                                                     | 2023 | 12(8) |
| 65. | Modified conformable double Laplace–Sumudu approach with applications                                             | Heliyon                                                                    | 2023 | 9(5)  |
| 66. | A New Approach in Solving Regular and Singular Conformable Fractional Coupled Burger’s Equations                  | WSEAS Transactions on Mathematics                                          | 2023 | 22    |
| 67. | On Further Refinements of Numerical Radius Inequalities                                                           | Axioms                                                                     | 2023 | 12(9) |
| 68. | A New Computation Approach: ARA Decomposition Method                                                              | WSEAS Transactions on Mathematics                                          | 2023 | 22    |
| 69. | A New Perspective on the Stochastic Fractional Order Materialized by the Exact Solutions of Allen-Cahn Equation   | International Journal of Mathematical, Engineering and Management Sciences | 2023 | 8(5)  |
| 70. | A modern analytic method to solve singular and non-singular linear and non-linear differential equations          | Frontiers in Physics                                                       | 2023 | 11    |
| 71. | Adapting Integral Transforms to Create Solitary Solutions for Partial Differential Equations Via A New Approach   | European Journal of Pure and Applied Mathematics                           | 2023 | 16(2) |
| 72. | Lp-Mapping Properties of a Class of Spherical Integral Operators                                                  | Axioms                                                                     | 2023 | 12(9) |
| 73. | Numerical solution for the system of Lane-Emden type equations using cubic B-spline method arising in engineering | AIMS Mathematics                                                           | 2023 | 8(6)  |
| 74. | Trustworthy Analytical Technique for Generating Multiple Solutions to Fractional Boundary Value Problems          | International Journal of Applied and Computational Mathematics             | 2023 | 9(5)  |
| 75. | Adapting partial differential equations via the modified double ARA-Sumudu decomposition method                   | Partial Differential Equations in Applied Mathematics                      | 2023 | 8     |
| 76. | Solution of Integral Equations Via Laplace ARA Transform                                                          | European Journal of Pure and Applied Mathematics                           | 2023 | 16(2) |
| 77. | Nth Composite Iterative Scheme via Weak Contractions with Application                                             | International Journal of Mathematics and Mathematical Sciences             | 2023 | 2023  |
| 78. | Analytical Solution of Coupled Hirota–Satsuma and KdV Equations                                                   | Fractal and Fractional                                                     | 2022 | 6(12) |



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|-----|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------|--------|
| 79. | A Fundamental Criteria to Establish General Formulas of Integrals                                                                | Journal of Applied Mathematics                        | 2022 | 2022   |
| 80. | On Time Fractional Partial Differential Equations and Their Solution by Certain Formable Transform Decomposition Method          | CMES - Computer Modeling in Engineering and Sciences  | 2023 | 136(3) |
| 81. | Direct Power Series Approach for Solving Nonlinear Initial Value Problems                                                        | Axioms                                                | 2023 | 12(2)  |
| 82. | On the Analytical Solution of Fractional SIR Epidemic Model                                                                      | Applied Computational Intelligence and Soft Computing | 2023 | 2023   |
| 83. | Conformable Double Laplace–Sumudu Iterative Method                                                                               | Symmetry                                              | 2023 | 15(1)  |
| 84. | Multi-Fuzzy Rings                                                                                                                | WSEAS Transactions on Mathematics                     | 2022 | 21     |
| 85. | Solving fractional partial differential equations via a new scheme                                                               | AIMS Mathematics                                      | 2023 | 8(3)   |
| 86. | A Novel Approach in Solving Improper Integrals                                                                                   | Axioms                                                | 2022 | 11(10) |
| 87. | A New Approach Using Integral Transform to Solve Cancer Models                                                                   | Fractal and Fractional                                | 2022 | 6(9)   |
| 88. | A hybrid analytical technique for solving multi-dimensional time-fractional Navier-Stokes system                                 | AIMS Mathematics                                      | 2023 | 8(1)   |
| 89. | General Master Theorems of Integrals with Applications                                                                           | Mathematics                                           | 2022 | 10(19) |
| 90. | Application of ARA-Residual Power Series Method in Solving Systems of Fractional Differential Equations                          | Mathematical Problems in Engineering                  | 2022 | 2022   |
| 91. | Applications on Double ARA–Sumudu Transform in Solving Fractional Partial Differential Equations                                 | Symmetry                                              | 2022 | 14(9)  |
| 92. | Homotopy Analysis Method Analytical Scheme for Developing a Solution to Partial Differential Equations in Fuzzy Environment      | Fractal and Fractional                                | 2022 | 6(8)   |
| 93. | On the Double ARA-Sumudu Transform and Its Applications                                                                          | Mathematics                                           | 2022 | 10(15) |
| 94. | ARA-residual power series method for solving partial fractional differential equations                                           | Alexandria Engineering Journal                        | 2023 | 62     |
| 95. | Exact Solutions of Nonlinear Partial Differential Equations via the New Double Integral Transform Combined with Iterative Method | Axioms                                                | 2022 | 11(6)  |



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|-----|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------|--------|
| 96. | Multi-Fuzzy Rings                                                                                                              | WSEAS Transactions on Mathematics                        | 2022 | 21     |
| 97. | A Novel Numerical Approach in Solving Fractional Neutral Pantograph Equations via the ARA Integral Transform                   | Symmetry                                                 | 2022 | 14(1)  |
| 98. | A new attractive method in solving families of fractional differential equations by a new transform                            | Mathematics                                              | 2021 | 9(23)  |
| 99. | A new integral transform: ARA transform and its properties and applications                                                    | Symmetry                                                 | 2020 | 12(6)  |
| 100 | The existence of a solution for semi-linear abstract differential equations with infinite B-chains of the characteristic sheaf | International Journal of Applied Mathematics             | 2018 | 31(5)  |
| 101 | Modification on PPS Sample Scheme with Replacement                                                                             | Journal of Mathematics and Statistics                    | 2019 | 15(1)  |
| 102 | A New Procedure For Selecting A Sample With Unequal Probability Without Replacement                                            | Far East Journal of Mathematical Sciences                | 2018 | 107(1) |
| 103 | On the choice of strategy for modified midzuno scheme                                                                          | Far East Journal of Mathematical Sciences                | 2017 | 101(7) |
| 104 | About the solution stability of volterra integral equation with random kernel                                                  | Far East Journal of Mathematical Sciences                | 2016 | 100(5) |
| 105 | Dirichlet Problem in a Simply Connected Domain, Bounded by the Nontrivial Kind                                                 | Advances in Differential Equations and Control Processes | 2016 | 17(3)  |
| 106 | Stationary connected curves in Hilbert spaces                                                                                  | Journal of Mathematics and Statistics                    | 2014 | 10(2)  |
| 107 | An inversion of one class of integral operator by la sakhnovich's operator identity method                                     | Studia Universitatis Babeş-Bolyai                        | 2010 | 55(2)  |
| 108 | Dirichlet Problem in the Simply Connected Domain, Bounded by Unicursal Curve                                                   | International Journal of Applied Mathematics             | 2009 | 22(4)  |
| 109 | Sharper inequalities for Powers of the numerical radii of Hilbert space operators                                              | International Mathematical Forum                         | 2009 | 4(29)  |

## Books:

| #  | Book Title                                  | Publisher       | Year |
|----|---------------------------------------------|-----------------|------|
| 1. | Mathematics and Computation                 | Springer Nature | 2023 |
| 2. | Mathematical Analysis and Numerical Methods | Springer Nature | 2024 |



## Conferences:

| #   | Paper Title                                                                                                                                | Organizing Institution  | Conference                                                                                            |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------|
| 1.  | Impact of Aboodh Power Series Algorithm for Integral Equations                                                                             | Al-Zaytoonah University | 12th International Conference on Information Technology (ICIT)                                        |
| 2.  | Complex Sawi Integral Transform and Some Applications                                                                                      | Al-Zaytoonah University | 12th International Conference on Information Technology (ICIT)                                        |
| 3.  | A New Analytical Approach to Fractional Calculus via Mittag-Leffler Functions and the complex Sawi Transform                               | Al-Zaytoonah University | 12th International Conference on Information Technology (ICIT)                                        |
| 4.  | Controlling DC Motor Speed with FoPID-Controllers                                                                                          | Zarqa University        | 25th International Arab Conference on Information Technology (ACIT)                                   |
| 5.  | Analyzing Chaotic Jerk System with Hyperbolic Sine: a new algorithm for Engineering Applications                                           | Zarqa University        | 25th International Arab Conference on Information Technology (ACIT)                                   |
| 6.  | Prediction of Visceral Leishmaniasis Incidences Utilizing Machine Learning Techniques                                                      | Zarqa University        | 2nd International Engineering Conference on Electrical, Energy, and Artificial Intelligence (EICEEAI) |
| 7.  | A Comparative Numerical Study of a Classical Model and Fractional Model for Leishmaniasis                                                  | Zarqa University        | International Arab Conference on Mathematics (IACMC 2023)                                             |
| 8.  | Solving Partial Integro Differential Equations Via Double Laplace-Formable Transform                                                       | Zarqa University        | International Arab Conference on Mathematics (IACMC 2023)                                             |
| 9.  | General Transform Decomposition Method                                                                                                     | Zarqa University        | International Arab Conference on Mathematics (IACMC 2023)                                             |
| 10. | Efficient Construction Technique for Resolving Dirichlet Boundary-Value Problems in Multiply Connected Domains for Real Elliptic Equations | Zarqa University        | International Arab Conference on Mathematics (IACMC 2023)                                             |

## Supervision of Theses:

|    | Year | Thesis Title                                                                                                  | Student Name                 |
|----|------|---------------------------------------------------------------------------------------------------------------|------------------------------|
| 1. | 2019 | B-Spline Method for Solving Boundary Value Problems of Differential Equations                                 | Halima Abu Hatab             |
| 2. | 2019 | A Sinc – collocation method for solving integro – differential equations of conformable fractional derivative | Doaa al-Qutani               |
| 3. | 2019 | Spectral Collocation Method for Solving Fractional Integro-Differential Equations                             | Haya Abozour                 |
| 4. | 2019 | Solving Fractional Differential Equations of Boundary Value Problems Using the Cubic B-Spline Method          | Ehdaa Mahmoud Abdallah Fadel |
| 5. | 2019 | Spectral Collocation Method for Solving Fractional Integro-Differential Equations                             | Haya Mohammed Abozour        |



|     |      |                                                                                                                     |                                   |
|-----|------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 6.  | 2020 | Numerical Solutions of Nonlinear Differential Equations Using Cubic B-Spline                                        | Baraa Mahmood Ayasrah             |
| 7.  | 2021 | Laplace-Residual Power Series Method for Solving the Fractional Differential Equations                              | Areej Rizeq Abd – Alttif Hijjawi  |
| 8.  | 2021 | Solving Initial Value Problems for Fractional Differential Equations by Cubic B- Spline Method                      | Bashar Hussien Rateb Rayan        |
| 9.  | 2021 | Solving Fractional Differential Systems by Laplace-Residual Power Series Method                                     | Emad Zeyad Abedalaziz Salah       |
| 10. | 2021 | Solving Fractional Differential Equations of Boundary Value Problems Using the Cubic B-Spline Method                | Ehdaa Mahmoud Abdallah Fadel      |
| 11. | 2023 | Applications of ARA Transform in Solving Differential Equations                                                     | Areej Mohammad Anees Abuomar      |
| 12. | 2023 | The Solutions of Some Types of Fractional Differential Equations Using the Power Series Method                      | Shadi Jaber                       |
| 13. | 2023 | Numerical Solutions of Stochastic Ordinary Differential Equations                                                   | Bashar Salem Musa Aloudat         |
| 14. | 2024 | A Hybrid Analytical-Numerical Approach for Solving Caputo Fractional Differential Equations with Proportional Delay | Ali Waheed Najeeb Haj Abdelrahman |
| 15. | 2024 | Analytical Solutions of Caputo Fractional Pantograph-Type Equation                                                  | Mohammad Jebrel Ahmad Almashny    |
| 16. | 2024 | Applications of the q-Laplace Transform in Quantum Calculus                                                         | Fathi Ahmed Fathi Zalloum         |
| 17. | 2025 | Enhanced Solution Technique for Fractional Burgers' Equations Using the Modified Aboodh Transform Method            | Murad Moufaq Ahmad Masadeh        |
| 18. | 2025 | Advanced Solution Methods for Fractional Burgers ' Equations Via the Modified Mohand Transform                      | Yahia Saleh Mustafa Jawarneh      |

## Courses Taught at Undergraduate Level:

1. Calculus I
2. Calculus II
3. Calculus III
4. Intermediate Analysis
5. Ordinary Differential Equation 1 & II.
6. Mathematical Method.
7. Partial Differential Equation 1 & II.
8. Complex Analysis I
9. Applications of Mathematica.



10. Principles of Mathematics.
11. Numerical Analysis (1).
12. Linear Algebra (1).
13. Special topics.

## Courses Taught at Master's:

1. Theory of ordinary differential equations
2. Partial differential equations
3. Selected topics in applied mathematics
4. Advanced numerical analysis

## Personal Information:

|                                |   |                                  |                  |      |
|--------------------------------|---|----------------------------------|------------------|------|
| <b>Name</b>                    | : | Ahmad Mohammad Ibrahim Qazza     |                  |      |
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| <b>Nationality</b>             | : | Jordanian                        |                  |      |
| <b>Marital Status</b>          | : | Married                          |                  |      |
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