



Ahmad El-Ajou

Department of Mathematics

Faculty of Science

Al-Balqa Applied University
Al-Salt, Jordan



Curriculum Vitae

Personal data

Name: Ahmad Moh'd Ishak El-Ajou

Date & Place of Birth: 24 March. 1972, Amman / Jordan

Address: Alkoom, Safa-Badran, Amman, Jordan

Marital Status: Married.

Nationality: Jordanian.

Mobile₁ : +966562281483

Mobile₂ : +962795712269

E-mail : ajou44@bau.edu.jo
ajou42@yahoo.com

BO.Box :

Citations Websites:

https://www.researchgate.net/profile/Ahmad_El-Ajou2

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

Scopus ID: [36494188500](https://scopus.com/authid/detail.url?authorID=36494188500)

ORCID ID: [0000-0002-7470-8162](https://orcid.org/0000-0002-7470-8162)

Academic Qualification

- PhD. in Mathematics, Applied Mathematics:
 - University: University of Jordan, Amman-Jordan. With Grade Point Average 3.70 of 4 in 2009.
 - Title of Thesis: Modified Homotopy Analysis Method: Application To Linear And Nonlinear Ordinary Differential Equations Of Fractional Order.
 - Supervisor : Prof. Ahmad D. Alawneh, Department of Mathematics, Faculty of Science, University of Jordan, Amman, Jordan.
 - Co-Supervisor: Prof. Zaid M. Odibat, Department of Mathematics, Faculty of Science, Al-Balqa' Applied University, Salt, Jordan.
- M.Sc in Mathematics Science from University of Jordan, Amman-Jordan. With Grade Point Average 3.33 of 4 in 2007.
- B.Sc. in Mathematics Science from Mu'tah University, Al-Karak - Jordan. With Grade Point Average 81.5 % in Jan. 1994.

Experiences	<ul style="list-style-type: none"> • I work as head of the Department of Mathematics in the Faculty of Science at the Balqa Applied University since 20 / 9/2020. • I worked for Taibah University as associate prof. of mathematics in the department of mathematics at faculty of science From 27/8/2019 to 19/9/2020. • I worked as head of the Department of Mathematics in the Faculty of Science at the Balqa Applied University from -16 / 9/2018 to 26/8/2019. • I worked as head of the Department of Mathematics in the Faculty of Science at the Balqa Applied University from -16 / 9/2015 to 15/8/2016. • I worked for Al-Balqa' Applied University as associate prof. of mathematics in mathematics department at faculty of science from - 11/9/2015-26/8/2019. • I worked for Al-Balqa' Applied University as assistant prof. of mathematics in mathematics department at faculty of science from - 22/5/2012-10/9/2015. • I worked for Al-Balqa' Applied University as lecturer of mathematics in mathematics department at faculty of science from 11/9/2011- 21/5/2012. • I worked for the Zarqa University as assistant prof. of mathematics in mathematics department at faculty of science & IT from 19/9/2009-18/9/2011. • I worked for the Isra Private University as assistant prof. of mathematics in faculty of science & IT from 15/2/2009 -3/10/2009. • I worked for the Isra Private University as lecturer of mathematics in faculty of science & IT from 9/10/2008 -14/2/2009. • I worked for University of Jordan as lecturer of mathematics part time from 1/2/2007-1/2/2015. • I worked for Wadi Seer College (UNRWA) as lecturer of mathematics from 9/1994-10/2008.
Research Interested	<ul style="list-style-type: none"> • Fractional Calculus • Ordinary and partial differential and Integral Equations of fractional order • Ordinary and partial differential and Integral Equations • Numerical Analysis and numerical methods • Analytic methods and approximate analytic methods • Fuzzy Differential and Integral Equations: ordinary and partial • Mathematical Modelling • System of matrix Differential Equations
Accepted and Published Papers	<ul style="list-style-type: none"> • <u>Ahmad El-Ajou</u>, Adaptation the Laplace Transform to Create Solitary Solutions for the Nonlinear Time-Fractional Dispersive PDEs Via a New Approach, Eur. J. Phys. Plus, Accepted (2020).

- Shatha Hasan, Moh'd Al-Smadi, Ahmad El-Ajou, Shaher Momani, Samir Hadid and Zeyad Al-Zhour, Numerical Approach in the Hilbert Space to Solve a Fuzzy Atangana-Baleanu Fractional Hybrid System, Chaos, Solitons & Fractals, Accepted (11/2020).
- Tareq Eriqat, Ahmad El-Ajou, Moa'ath Oqielat, Zeyad Al-Zhour, Shaher Momani, A New Attractive Analytic Approach for Solutions of Linear and Nonlinear Neutral Fractional Pantograph Equations, Chaos, Solitons & Fractals, 138(9), 2020, 1-11.
- Shatha Hasan, Ahmad El-Ajou, Samir Hadid, Moh'd Al-Smadi, Shaher Momani, Atangana-Baleanu fractional framework of reproducing kernel technique in solving fractional population dynamics system, Chaos, Solitons & Fractals, 133(4), 2020, 1-10.
- Ahmad El-Ajou, Moh'd Al-Smadi, Moa'ath Oqielat, Shaher Momani, Samir Hadid, Smooth Expansion to Solve High-Order Linear Conformable Fractional PDEs Via Residual Power Series Method: Applications to Physical and Engineering Equations, Ain Shams Engineering Journal, 2020, In Press.
- Ahmad El-Ajou, Moa'ath Oqielat, Zeyad Al-Zhour, Shaher Momani, A Class of Linear Non-Homogenous Higher Order Matrix Fractional Differential Equations: Analytical Solutions and New Technique, Fractional Calculus and Applied Analysis, 23 (2), (2020) 356-377
- Moa'ath Oqielat, Ahmad El-Ajou, Zeyad Al-Zhour, Raed Alkhasawneh, Hussam Alrabaiah, Series solution for nonlinear time-fractional Schrödinger equation: Comparisons between conformable and Caputo derivatives, Alexandria Engineerin, 59(4), 2020, 2101-2114.
- Ahmad El-Ajou, A Modification to the conformable fractional calculus with Some applications, Alexandria Engineering, 59(4), 2020, 2239-2249
- Ahmad El-Ajou, Taylor's Expansion for Fractional Matrix Functions: Theory and Applications, Journal of Mathematics and computer science, 21(1),2020,1-17
- Ahmad El-Ajou, Moa'ath N. Oqielat, Osama Ogilat, Mohammed Al-Smadi, Shaher Momani and Ahmed Alsaedi, Mathematical Model for Simulating the Movement of Water Droplet on Artificial Leaf Surface, Frontiers In Physics, 7 (2019), 132.
- Ahmad El-Ajou, M. N. Oqielat, Z. Al-Zhour, S. Kumar and S. Momani, Solitary Solutions for Time-Fractional Nonlinear Dispersive PDEs in the sense of conformable Fractional Derivative, Chaos 29 (2019), 093102.

- M. Shqair, Ahmad El-Ajou, and M. Nairat, Analytical Solution for Multi-Energy Groups of Neutron Diffusion Equations by a Residual Power Series Method, *Mathematics*, 7 (2019), 633.
- Ahmad El-Ajou, Z. Al-Zhour, M. Oqielat, S. Momani, and T. Hayat, Series Solutions of Nonlinear Conformable Fractional KdV-Burgers Equation with Some Applications, *Eur. J. Phys. Plus*, 134 (2019) 402.
- Ahmad El-Ajou, M. N. Oqielat, Z. Al-Zhour, and S. Momani, Analytical numerical solutions of the fractional multi-pantograph system: Two attractive methods and comparisons, *Results in Physics*, 14 (2019), 102500.
- Ahmad El-Ajou, O. Abu Arqub, S. Momani, D. Baleanu, A. Alsaedi, A novel expansion iterative method for solving linear partial differential equations of fractional order, *Applied Mathematics and Computation*, 257(2015), 119-133.
- Ahmad El-Ajou, O. Abu Arqub, M. AL-Smadi, A general form of the generalized Taylor's formula with some applications, *Applied Mathematics and Computation*, 256 (2015) 851–859.
- O. Abu Arqub, Ahmad El-Ajou, S. Momani, Construct and predicts solitary pattern solutions for nonlinear time-fractional dispersive partial differential equations, *Journal of Computational Physics*, 293(2015), 385-399.
- Ahmad El-Ajou, O. Abu Arqub, S. Momani, Approximate analytical solution of the nonlinear fractional KdV-Burgers equation: a new iterative algorithm, *Journal of Computational Physics*, 293(2015), 81-95.
- M. AL-Smadi, O. Abu Arqub, Ahmad El-Ajou, A numerical iterative method for solving systems of first-order periodic boundary value problems, *Journal of Applied Mathematics*, Volume 2014, Article ID 135465, 10 pages, <http://dx.doi.org/10.1155/2014/135465>.
- O. Abu Arqub, Ahmad El-Ajou, Z. Zhou, S. Momani, Multiple Solutions of Nonlinear Boundary Value Problems of Fractional Order: A New Analytic Iterative Technique, *Entropy* 2014, 16, 471-493; doi:10.3390/e16010471.
- Ahmad El-Ajou, Numerical solutions of fourth-order, two-point integro-differential equations using reproducing kernel Hilbert space method, *Journal of Advanced Research in Applied Mathematics*, Vol. 6, Issue. 1, 2014, pp. 80-94.
- Ahmad El-Ajou, O. Abu Arqub, Z. Zhou, S. Momani, New results on fractional power series: Theories and Applications, *Entropy* 2013, 15, 5305-5323; doi:10.3390/e15125305.

	<ul style="list-style-type: none"> • O.A. Arqub, <u>Ahmad El-Ajou</u>, S. Momani and N. Shawagfeh, Analytical Solutions of Fuzzy Initial Value Problems by HAM, Applied Mathematics and Information Sciences, 7(5) (2013)1903-1919. • O. Abu Arqub, <u>Ahmad El-Ajou</u>, A. Sami Bataineh, and I. Hashim, A Representation of the Exact Solution of Generalized Lane-Emden Equations Using a New Analytical Method, Abstract and Applied Analysis, Volume 2013, Article ID 378593, 10 pages. • <u>Ahmad El-Ajou</u> and O. A. Arqub, Solving fractional two-point boundary value problems using continuous analytic method, Ain Shams Engineering Journal (Engineering Physics and Mathematics), 4 (2013) 539–547. • O. A. Arqub and <u>Ahmad El-Ajou</u>, Solution of the fractional epidemic model by Homotopy Analysis method, Journal of King Saud University – Science, 25 (2013) 73–81. • <u>Ahmad El-Ajou</u>, O.A. Arqub and S. Momani, Homotopy analysis method for second-order boundary value problems of integro-differential equations, Discrete Dynamics in Nature and Society, Volume 2012 (2012), Article ID 365792, 18 pages. • <u>Ahmad El-Ajou</u>, Z. Odibat, S. Momani and A. Alawneh, Construction of Analytical Solutions to Fractional Differential Equations Using Homotopy Analysis Method. IAENG International Journal of Applied Mathematics, 40:2, IJAM_40_2_01.
<p>Submitted Papers</p>	<ul style="list-style-type: none"> • <u>Ahmad El-Ajou</u>, A Matrix expansion solution for a Hyperbolic system of time-fractional PDEs with variable coefficients. • Traveling wave solutions for triple nonlinear fractional Schrödinger equations via the Riccati-Bernoulli sub-ODE method. • Numerical Approach in the Hilbert Space to Solve a Fuzzy Atangana-Baleanu Fractional Hybrid System. • A New Approach for Solving Fuzzy Quadratic Riccati Differential Equations.
<p>Presentations</p>	<ul style="list-style-type: none"> • <u>Ahmad El-Ajou</u>, Z. Odibat and A. Alawneh, Approximate solutions to boundary value problems of fractional order by the homotopy analysis method, The Third Conference on Mathematical Sciences, Jordan, (2011). • Ahmad El-Ajou, Zaid Odibat, Ahmad Alawneh, Numerical approximation for population growth model, The Fourth International Workshop on Advanced Computation for Engineering Applications (ACEAO8), Jordan, (2008) 112-117.
<p>Supervised Doctoral &</p>	<ul style="list-style-type: none"> • Tareq Eriqat (MSc), a series method for solving linear and nonlinear fractional pantograph equations, Al-Balqa Applied University, 2020

Master Theses:	
Courses Taught at University Level	<ul style="list-style-type: none"> • Pre-Calculus • Calculus I • Calculus II • Calculus III • Intermediate Analysis • Principles of mathematics • Ordinary diff. equ. (1) • Ordinary diff. equ. (2) • Partial diff. equ.(1) • Math. for Economics and Businesses • Linear Algebra I • Linear Algebra II • Discrete Mathematics • Probability and Statistic • Principles of Statistics • Abstract Algebra I • Complex Analysis • Foundations of Math • Mathematical Modeling • Engineering Mathematics (1) • Engineering Mathematics (2) • Topology (1) • Applied Mathematics (I) for master Program • Integral Transforms and Integral Equations • Mathematical Programming Packages (Matcad & Mathematica)
Courses and Activities	<ul style="list-style-type: none"> • I prepared and presented an educational T.V programme for the (A.R.T). • I had successfully obtained the certificate of The International Computer Driving License (ICDL). • I obtained a lot of Evaluation Certificates for teaching and development from UNRWA. • I had successfully completed a One year in-Service Training Course in September 1996 in “professional Training for University Graduate Teachers of Mathematics in the Preparatory Cycle”. Issued by Institute of Education / UNRWA.

Membership in Professional Organizations	<ul style="list-style-type: none"> • Member of Organizing and Technical Committee of the “Third Conference on Mathematical Sciences (CMS’2011)” - Zarqa University. • Jordan Research Group in Applied Mathematics: Since 2009 • International Rough Set Society (IRSS): Since 2013 • Iranian Fuzzy Systems Society (IFSS): Since 2013 • International Association of Engineers and Scientists (IAEST): Since 2014 • International Association of Engineers (IAENG): Since 2014
Computer Skills	<ul style="list-style-type: none"> • General Computer Skills: ICDL , Latex. • Mathematical Software: Mathematica, Maple, Matlab.
Interest and Hobbies	<ul style="list-style-type: none"> • Social work and volunteering • Reading • Problem Solving
References	<ul style="list-style-type: none"> • Prof. Dr.Ishaq Hashim Department of Mathematics, Faculty of Science, University Kebangsaan Malaysia / Malaysia E-mail address: ishak_h@ukm.my • Prof. Dr. Shaher Momani Department of Mathematics, Faculty of Science, University of Jordan / Jordan E-mail address: shahermm@yahoo.com • Prof. Dr. Zaid Odibat Department of Mathematics Faculty of Science, Al-Balqa’ Applied University / Jordan. Email address: z.odibat@gmail.com