

FACULTY FULL NAME: Dr. Eada Ahmed Al zahrani

POSITION : Assistant Professor

Personal Data

Nationality : Saudi

Date of Birth : 1974

Department : Mathematics

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Language Proficiency

Language	Read	Write	Speak
Arabic	✓	✓	✓
English	✓	✓	✓

Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
January 2006	PhD	College of Sciences in Dammam – General Directorate for Girls Education	Dammam-KSA
June 1998	Master	College of Sciences in Dammam – Ministry of education	Dammam-KSA
January 1994	B.A./B.Sc	College of Sciences in Dammam – Ministry of education	Dammam-KSA

PhD, Master Research Title: (Academic Honors or Distinctions)

PhD	Maximum Principle and Existence of solutions for some nonlinear differential systems with variable coefficient
Master	Decomposition of C^* algebra related to certain equations

Professional Record: (Beginning with the most recent)

Job Rank	Place and Address of Work	Date
Assistant Professor	University of Dammam(Imam Abruhran Bin Faisal University) - KSA	2007-2018
Lecturer	University of Dammam- KSA	1998-2006
Demonstrator	University of Dammam- KSA	1994-1998



Scientific Achievements

Published Refereed Scientific Researches

(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication	
	Eadah Ahmad Alzahrani ,Haydar Akca Xiaodi Li	New synchronization schemes for delayed chaotic neural networks with impulses	Neural Computing and Applications, (2016), 1-15, DOI 10.1007/s00521-016-2218-7	
	E. A. Alzahrani	Distributed control of nonlinear systems involving different p-laplacian operators on bounded and unbounded domains.	Advances in Differential Equations and Control Processes.2014.	
	Akca, H; Alassar, R ; Covachev, V; Covacheva, Z; Al-Zahrani, E	Continuous-time additive Hopfield-type neural networks with impulses :	JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS Volume: 290 Issue: 2 Pages: 436-451 DOI: 10.1016/j.jmaa.2003.10.005 Published: FEB 15 2004	
	E.A. Al Zahrani, M.A. Mourou and K.Saoudi	Existence of Solutions For a Class of Strongly Coupled p(x)-laplacian	Bol. Soc. Paran. Mat. (3s.) v. 36 4 183–195.	2017
	E.A. Al Zahrani, H. Seraj	Existence of Weak Solutions for some Nonlinear Systems on R^N	Electronic J. Diff. Eqns. Vol.2006(2006),	2007

Refereed Scientific Research Papers Accepted for Publication

#	Name of Investigator(s)	Research Title	Journal	Acceptance Date
1	Kamel Saoudi, Mouna Kratouand Eadh Al Zahrani	UNIQUENESS AND EXISTENCE OF SOLUTIONS FOR A SINGULAR SYSTEM WITH NONLOCAL OPERATOR VIA PERTURBATION METHOD	Journal of Applied Analysis and Computation	2020
2				

Published Books

#	Authors	Title	Year
1	M. Abualez, , and ,Eada Al-Zahrani	Differential and Integral Calculus (in Arabic))Textbook for Math101N, Al mutanabi bookstore publications	2009



2	Eada Al-Zahrani	Ahandbook of real analysis (part 1)(in Arabic) for Math 403, Al mutanabi bookstore publications	2011
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Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research Project Title	RDate
1	MAJDOUB Mohamed & Al zahrani E. A.	Remarks on Blow-up Phenomena in p-Laplacian Heat Equation with Inhomogeneous Nonlinearity	2020
2	Moure, M.&Al zahrani, E. A.	Existence of Solutions for a class of strongly coupled p(x) laplacian System	2013
	Khafagi, S. & Al zahrani, E. A.	Existence and Uniqueness of Weak Solutions for Quasilinear System Involving Weighted p -Laplacian operators with application on Optimal Control Problems	2014

Grants and Awards

Name of award	Offered by / place	Date
Highly Cited Researcher	Thomson Reuters	2004

Teaching Activities

Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
١	Calculus 2	Math 205	Lectures/ Tutorials
٢	Calculus 3	MATH212O	Lectures/ Tutorials
3	Calculus I	MTH101	Lectures/ Tutorials
4	Differential Forms & Vector Analysis	Math 443N	Lectures/ Tutorials/
5	Functional Analysis,	MATH484N	Lectures/ Tutorials
6	Real Analysis II -	MATH342N	Lectures/ Tutorials/electronic course (MC)
7	Measure theory and integration	MATH409O	Lectures/ Tutorials/
8	General Math	Math 101N	Lectures/ Tutorials
9	Real analysis I	Science college /KSU	Lectures
10	(Ordinary Differential equations)	Science college /KSU/mathematics	Lectures
11	Applied analysis(6 weeks only)	Postgraduate /Math 523	Lectures /tutorials
12	Complex analysis	Math 501	Lectures /tutorials
13	Mathematics for physical sciences	Math 503	Lectures /tutorials
	Mathematical methods	MATH 402	Lectures /tutorials//course file



COMUTATIONAL mathematics	Electronic course(MC)
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Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)

1	Calculus II, Math 205 : Definite integrals of functions of a single variable. Fundamental Theorem of Calculus. Indefinite integrals. Applications of the definite integral to area, volume, arc length and surface of revolution. Integral of trigonometric and hyperbolic functions and their inverses, techniques of integrations and improper integrals. Infinite sequences and series, converging tests, alternating series, absolute and conditional convergence. Power series, Taylor and Maclaurin series, convergence of Taylor series. The Binomial Series and applications of Taylor series .
2	Calculus III MATH2120 - Vectors in 3-dimensional space: geometry of the three dimensional space and vectors, parametric equations of lines and planes in space, quadratic surfaces. Partial derivative: domain and the range of functions of several variables, limit and continuity of function of several variable, partial derivatives, the chain rule, directional derivatives and gradient, the extreme values of function of several variables, Lagrange multipliers. Multiple integral: double integral, Polar coordinates, polar curves, double integrals and area in polar coordinates, triple integral, triple integral in cylindrical and spherical coordinates. Line integral: line integral on parameterized two- or three-dimensional curve of scalar functions and vector valued functions. Green's theorems.
3	Calculus I MATH101 Limits and continuity of function of a single variable. Differentiation, differentiation rules, derivative of trigonometric functions, the chain rule, implicit differentiation. Differentiation of inverse functions and logarithms. Application of derivative, the Mean Value Theorem, monotonic functions, concavity and curve sketching. Indeterminate forms. Applied optimization, antiderivative.
4	Differential Forms & Vector Analysis, Math 443N -Multi-variable functions: continuity, differentiability, partial derivatives, Jacobi matrices, chain rule. Inversion theorem and theorem of implicit functions. Vector differential calculus: vector fields, differential operators, orthogonal curvilinear coordinates. Vector analysis and applications: theorems of Green, Gauss and Stokes. Differential forms: degree of differential forms, exact and closed differential forms, exterior differential of differential forms, vector fields and differential forms and integrals of differential forms.
5	Functional Analysis MATH484N , - Metric and normed spaces, convergence in normed spaces, completeness in metric spaces, Banach spaces and dual spaces, linear functionals and linear operators and their properties, compact operators, inner product spaces and Hilbert spaces, orthonormal bases, orthogonal complements and direct sums, Riesz representation theorem, adjoint operators, fundamental theorems in functional analysis (Baire theorem, Banach-Steinhaus theorem, open mapping theorem, closed graph theorem and Hahn-Banach theorem), strong and weak convergence.
6	Real Analysis II, MATH342N - Differentiability of real functions, Mean-value theorem, Inverse function theorem, Riemann integral, Cauchy Criteria for integrability, Improper Integral, sequence of functions, pointwise and uniform convergence of sequences and series of functions, and the interchange between sum and limit ,derivative, Integral operations in series.
7	Measure theory and Lebesgue integration MATH4090 - Concept of measure, Lebesgue outer measure and its properties, Sigma-algebra, Borel algebra, measurable sets, non-measurable sets, Cantor set, concept and properties of measurable functions, operations on measurable functions, Littlewood's three principles, construction of Lebesgue integration, simple functions, the space L^1 of integrable functions, Monotone convergence theorem and Lebesgue dominated convergence theorem, Fubini theorem, L^p spaces, product measure.
8	Real analysis I : MATH3010 Algebraic properties of \mathbb{R} , roots, supremum and infimum, open and closed sets, nested intervals and cluster points, real sequences and their limits, subsequences, convergence and divergence, Cauchy criterion ,completeness of \mathbb{R} , limits of real functions and some extensions of the limit concept. Notion of continuity, uniform continuity, Lipschitz function.
9	General Math, Math 101N Real numbers and their properties . factoring polynomials , simplifying rational expressions and radical expressions , Solving Linear , quadratic , absolute value and other types of equations with applications in modelling ,Inequalities and absolute value inequalities, Inverse, Equations of



	line , Graphs of basic function , Graphing techniques, Functions operation and composition ,exponential and logarithmic functions ,Solving exponential and logarithmic equations , Angles, evaluating trigonometric and circular functions, solving right triangles, Fundamental , sum , difference and double angle trigonometric identities, Verifying trigonometric identities, Inverse circular functions, Parabolas , Ellipses and Hyperbolas
10	ODE (Ordinary Differential equations)-KSU Definition of differential equations, Classification of differential equations by (order, degree, ordinary, partial, linear, nonlinear), Solutions (explicit, implicit, general, particular), Formulation of differential equations: The elimination of arbitrary constants, First-order ODE's: Initial value problems, separable equations, Homogeneous equations, exact equations, Linear equations with variable coefficients, Bernoulli's equation, Second and higher orders linear differential equations: General solution of homogeneous linear equations with constant coefficients, principle of superposition, linear independence and the Wronskian, Second and higher orders non homogeneous linear equations with constant coefficients: Method of Linear differential operators with constant coefficients, Second and higher orders non homogeneous linear equations with variable coefficients: Variation of parameters, Cauchy-Euler Equation, Laplace transforms and their applications, Series solutions of linear equations.
11	Complex analysis MATH501: Complex numbers, Cartesian and polar representation of complex numbers, powers and roots of complex numbers. Limits and continuity of a complex function. Analytic functions, Cauchy-Riemann equations, harmonic functions. Exponential, trigonometric, hyperbolic functions and logarithmic functions. Complex integration, contour integrals, Cauchy's theorem, Cauchy's formula. Series representation of analytic functions, Taylor and Laurent series, Zeros and singularities. Residue theory. Applications to real and improper integrals. The conformal mappings.
12	Applied analysis (math 523) postgraduate Metric spaces and normed spaces.,Continuous functions., Topological, Banach and Hilbert spaces. Eigenfunction expansion and Fourier series.
13	Mathematics for physical science (math 307) Linear Algebra: matrices, row reduction, determinants, Cramer's rule, vectors, matrix operations, linear combination, linear functions, linear operators, linear dependence and independence. Calculus of Variation: the Euler equation and its uses, the Brachistochrone problem. Lagrange's equations. Tensor Analysis: Cartesian tensors, tensors definition and operations, Kronecker delta and Levi-Civita symbol, pseudo vectors and pseudo tensors, curvilinear coordinates, vector operations in orthogonal curvilinear coordinates. Complex Analysis: complex numbers, Cartesian and polar representation of complex numbers, powers and roots of complex numbers, the exponential and trigonometric functions, hyperbolic functions, logarithms, complex infinite series, complex power series, Euler's formula. Analytic functions, Cauchy-Riemann equations, harmonic functions, complex integration, contour integrals, series representation of analytic functions, Taylor and Laurent series, zeros and singularities, residue theory, applications to real and improper integrals, conformal mappings.
	Mathematical methods MATH 40 2- Review of power series solution for differential equations, Gamma and Beta functions, Hypergeometric Functions, Orthogonal Polynomials (Legendre, Hermite and Lagurre) and their associated functions, Bessel functions
14	Mathematics Research Seminar MATH506 This applied course concerns in developing students' skills in research and scientific writing. It contains the following themes: Reading and analyzing scientific paper suggested by the advisor, methodology of choosing a research subject, and formulating its question, literature survey, searching resources, quoting and research ethics, research design, collect and analyze data, write research proposal, paper refereed and publishing, prepare an oral presentation. The student will be asked read scientific journals and chapters in specific books related to an assigned subject. Also the student has to prepare a written report and to give an oral presentation on his research work for a final assessment.

Administrative Responsibilities, Committee and Community Service
(Beginning with the most recent)

Committee Membership



#	From	To	Position	Organization
1	2017	2021	A member committee of preparing an electronic course for (computational mathematics+ Mathematical Methods)	Department of Mathematics
2	2018-	2019	A member in advisory committee (one semester only)	Department of Mathematics – College of science in Dammam
	2019	2019	A member in improvement committee of master program (pure track)	
3	2017-	2018	A member in Auto-Study of Mathematics program for Quality and Accreditation (Qasd)	Department of Mathematics – College of science in Dammam
4	2014-	2017	Coordinator for Equivalency of curriculum committee	Department of Mathematics – College of science in Dammam

Volunteer Work

#	From	To	Type of Volunteer	
	2006-2007		Enrichment lectures	King Abdulaziz and his men for gifted people
	2016-2020		training	Alumni center in science college
	2020-2021		Assessing Reviewing final reports	Co-up training unit

Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

1	MS Word, MS Excel, MS Power-point
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Last Update: October 15, 2020