Doctor of Philosophy (Doctorat) In Numerical Analysis

Personal Details

Name: **Ali Tedjani**
Date of birth: 13/05/1959
Nationality: Algerian
Martial: Married (5 children)
Contact address: Doctor Ali Tedjani
                    Al-Imam Muhammed Ibn Saud
                    Islamic University
                    P.O. Box 5701, Riyadh 11432 –
                    Saudi Arabia

Phone Number: Home: 00 966 11 494 30 22
                       Mobile: 00 966 53 293 4133
Email: tedjani513@yahoo.com

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Education

- **PhD in Numerical Analysis** (with very high honors), Pierre and Marie Curie (Paris VI) University, France (June 1991)
  Title of thesis: Modelisation and mathematical study of motion
- **M.Sc. in Pure mathematics**, Pierre and Marie Curie (Paris VI) University, France (June 1986)
  Title: The Unicity of Trajectory and the comparison of the solution of the stochastic differential equation.
- **B.Sc. in Functional Analysis**, University of Batna, Algeria (June 1984).
- **High School Diploma** in Mathematic, El-oued, Algeria (June 1980)

Academic experiences

2011 to date   Assistant professor of Mathematics , Al-Imam Muhammed Ibn Saud Islamic University, Riyadh, Saudi Arabia.

2011 to 2013   Assistant professor of Mathematics , Riyadh College of Telecom & Information, Riyadh, Saudi Arabia.

1999 to 2011   Assistant professor of Mathematics , Riyadh College of Technology, Riyadh, Saudi Arabia.

1997-1999   Post doctoral , Medimat Laboratory (mathematical application on biological system), Pierre and Marie Curie (Paris VI) University, France

1994-1997   Lecturer of Mathematics , College of Professional and Technical education in Ris-Orangis, L´Essonne, France

1990-1994   Lecturer of Mathematics , College of L´Aigle. Academy of Caen, France

1988-1990   Lecturer of Mathematics , Professional and Technical College at the city of Villepatour. Academy of Creteil, France

Professional experiences

01/2013 to 05/2013   Head of Mathematics committee of BSc. Program (preparation of syllabus of all courses)

2011-2013   Member of scientific committee Technical and Vocational Training Corporation , Riyadh, Saudi Arabia.

2010-2011   Review of official Mathematics text books of College at Technical and Vocational Training Corporation , Riyadh, Saudi Arabia.

2007-2008   Author of 4 official Mathematics textbooks for Diploma in Riyadh college of technology- Riyadh, Saudi Arabia .

2005-2007   Member of scientific committee in department of General Studies at Riyadh College of Technology, Riyadh, Saudi Arabia

2002-2003   Co-author of 7 official Mathematics textbooks for Diploma in Riyadh college of technology- Riyadh, Saudi Arabia .

Publications:

o Scientific publications

- A.Tedjani: Modelisation of muscular strength control;1988, Medimat's days, university Paris VI.
- A.Tedjani,Y.Cherruault and A.Guiellez: Study of a complex motion., Cypernitica Namur, No3.1990.
- A.Tedjani,Y.Cherruault: Determination of a muscular strength of the animal during a locomotion cycle. Bioscience No 4.1991
- A.Tedjani: Mathematical model of the posterior limb movement during the swing portion, 1998, Medimat's days university Paris VI.
- A.Tedjani: the solution of: Mathematical model of the posterior limb movement during the swing portion by the quasi-linearization technique.1999, Medimat's days university Paris VI..

o Books (Text Books):

- *Engineering Mathematics for Electronics and Electrical Technology,* General Organization for Technical Education and Vocational Training, 2003, Author.

- *Basic Mathematics for Accounting and Management*, General Organization for Technical Education and Vocational Training, 2003, Main co-author.

- *Basic Mathematics for Electronics and Electrical Technology*, General Organization for Technical Education and Vocational Training, 2003, Main co-author.

- *Basic Mathematics for Computer Technology*, General Organization for Technical Education and Vocational Training, 2003, Main co-author.

- *Basic Mathematics for Mechanical Technology*, General Organization for Technical Education and Vocational Training, 2003, Main co-author.
- *Basic Mathematics for Chemical Technology*, General Organization for Technical Education and Vocational Training, 2003, Main co-author
- *Basic Mathematics for Civil & Architectural Technology*, General Organization for Technical Education and Vocational Training, 2003, Main co-author.
- *Basic Mathematics for students* of College *Technology* General Organization for Technical Education and Vocational Training, 2008, Main Author.
- *Calculus I for Civil & Architectural Technology*, General Organization for Technical Education and Vocational Training, 2008, Author.
- *Computer mathematic*s for Computer Science, General Organization for Technical Education and Vocational Training, 2008. Author.
- *Calculus II for Electronics and Electrical Technology,* General Organization for Technical Education and Vocational Training, 2008, Author.
- *Review of official Mathematics text books of College* at Technical and Vocational Training Corporation , Riyadh, Saudi Arabia. 2011
- *Linear Algebra and an Introduction to Differential Equations* book in Progress

Teaching Subjects

Calculus I and II (Diploma)

Limits and continuity, Differentiation, Derivative of usual functions, Derivatives of Trigonometric, Exponential and Logarithmic functions , Applications of differentiation, Integration, Integrals of usual functions, Integration by parts, Integration by partial fractions, Definite integral, Fundamental theorem of calculus, Applications of the integral, Separable Differential equation, Homogeneous Differential equations, First-order linear differential equations, Second-order linear differential equations.

Linear Algebra and an Introduction to Differential Equations (BSc.)

Complex Numbers, Linear Systems, Determinants, Inverse of the matrix, Vectors spaces, Eigenvalues, and Eigenvectors,   First and Second Linear Differential equations, Laplace transform, Fourier transform.

Sequences and Series (BSc.)

Sequences, Numerical Series, Power Series, Taylor's and Maclaurin's series, Fourier series

Numerical Analysis (BSc.)

Equation (Newton-Raphson, Fixed point, Secant), Differentiation, Integration (Rectangular, Trapezoidal, Simpson), Differential equations: First order Differential equations (Euler and Runge-Kutta methods) - Second-order Differential equations (Runge-kutta methods), Interpolation (Lagrange), Curve fitting (Least squares).

Introduction to probability and Statistics (BSc.)

Sample space, Probability space, Counting techniques, Random variables, Mean and variance, Usual discrete distribution (Discrete uniform, Binomial, Poisson), Usual continuous distribution (Continuous uniform, Normal distribution), Random sampling, Sample parameters, Point estimation, Confidence intervals, Tests of hypothesis

Computer Mathematics (Diploma)

The Sets and Counting systems (The sets , Decimal system, Binary and Hexadecimal System, Conversion System), Logical operations (The principal Logical operations, Tautologies and contradictions, Logical equivalence, The Algebra of proposition, Conditional and Biconditional propositions, Arguments), Logical gates and logical expressions (Boolean Algebra, Formulation of Logical expressions, Simplification of logical expressions)

Competences

- Numerical Analysis
- Mathematical modeling: Method of optimization, Optimal control of biological system, Compartmental analysis
- Complex Analysis
- Functional Analysis
- Theory of Differential Equation
- Linear Algebra
- Probability and Statistics
- Computer Mathematics

Languages

Arabic, French and English

References:

[1] **Dr. Ali S. Hennache**

Professor at Department of physique, Imam Mohammed Bin Saud Islamic

University, Kingdom of Saudi Arabia
Phone: 050 828 2696
Email : alihen@hotmail.com

[2] **Dr. Lazhar bougoffa)**

Professor at Department of Mathematics, Imam Mohammed Bin Saud Islamic

University, Riyadh, Kingdom of Saudi Arabia.
Phone: 050769 8728
Email : **bougoffa@hotmail.com**

[3] **Dr. Salah Nacer Alndas**
Head of the department of General Studies, Riyadh College of Telecom & Information, Riyadh, Kingdom of Saudi Arabia
Email: Alndas@cti.edu.sa
Phone: 00966114542565: Ext. 701

[4] **Dr Mohamed Guediri**
Professor at the department of Mathematics, King Saud University,
Kingdom of Saudi Arabia
Phone: 050 548 3161
Email : mguediri@ksu.edu.sa