FACULTY FULL NAME: Ezzedine Rabeh Mliki

POSITION: Assistant professor

Personal Data

Nationality | Tunisian

Date of Birth | 12/08/1977

Department | Mathematics

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Language Proficiency

Language	Read	Write	Speak
Arabic	✓	✓	✓
English	✓	✓	✓
Others (French)	✓	✓	✓

Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2009	PhD	University of Tunisian- el Manar	Tunisia
2005	Master	University of Tunisian- el Manar	Tunisia
2003	Bachelor	University of Monastir	Tunisia

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

PhD	Exit Laws, Mixing and Bochner Subordination
Master	Stochastic Differential Equations and Martingale Problems

Professional Record: (Beginning with the most recent)

Job Rank	Place and Address of Work	Date
Assistant professor	Imam Abdulrahman Bin Faisal University	2014/2023
Assistant professor	University of Monastir	2009/2014
Lecturer	University of Bizerte	2005/2009
Lecturer	University of Tunisian- el Manar	2004/2005

Scientific Achievements

Published Refereed Scientific Research
(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1	Ezzedine Mliki	Correlation Structure of Time-Changed Generalized Mixed Fractional Brownian Motion	Fractal Fract, 2023
2	Ezzedine Mliki and Maram Alwohaibi	On the Generalized Mixed Fractional Brownian Motion Time changed by inverse α-stable subordinator	Global and Stochastic Analysis, 2023
3	Ezzedine Mliki and Ridha Hamdi	Correlation analysis of the relationship between Arrhenius viscosity parameters in Binary Liquid Mixtures	South African Journal of Chemical Engineering, 2023
4	Ezzedine Mliki	ON THE FRACTIONAL MIXED FRACTIONAL BROWNIAN MOTION TIME CHANGED BY INVERSE α-STABLE SUBORDINATOR	Global and Stochastic Analysis, 2023
5	Ezzedine Mliki and Mohamed Majdoub	Well-posedness for Hardy–Hénon parabolic equations with fractional Brownian noise	Analysis and Mathematical Physics, 2021
6	Ezzedine Mliki and Sheikha Alajmi	Mixed Generalized Fractional Brownian Motion	Journal of Stochastic Analysis, 2021
7	Ezzedine Mliki, Manal Al-Ohali et al.	Validation of Messaâdi equation on viscosity-temperature dependence for some ternary liquid mixtures by statistical correlation analysis	Physics and Chemistry of Liquids Aug 2020
8	Ezzedine Mliki and Sheikha Alajmi	On the mixed fractional Brownian motion time-changed by inverse alpha-Stable subordinator	Applied Mathematical science. Sep 2020
9	Ezzedine Mliki, Z. H. A. Alsunaidi et al.	Hyperbolic Correlation between the Viscosity Arrhenius Parameters at Liquid Phase of Some Pure Newtonian Fluids and Their Normal Boiling Temperature	Russian Journal of Physical Chemistry A Feb 2020
10	Ezzedine Mliki, fawziah S. Alshehri et al.	Modeling of the irradiation effect on some physicochemical properties of metoprolol tartrate for safe medical uses	Scientific Reports Jan 2020
11	Ezzedine Mliki, S S Al-Jameel et al.	A Novel Equation Correlating the Rheological Properties of Some Commercial Tomato Ketchups	J Biochem Tech Sep 2020
12	Ezzedine Mliki et al.	Some New Chaotic Maps with Application in Stochastic	Elsevier, October 2019

13	Ezzedine Mliki et al.	The most hidden chaotic flow	Nonlinear Dynamics 2017
14	Ezzedine Mliki et al.	A New Chaotic Attractor Around a Pre-Located Ring Int.	Journal of Bifurcation and Chaos, 2017
15	Ezzedine Mliki and Mohamed Hmissi	On the exit laws for subordinated semi-groups by means of C1-subordinators.	Comment. Math. Univer. Caro (2010).
16	Ezzedine Mliki and Hassen Mejri	On the abstract subordinated exit equation	Abstr. App. Anal. (2010).
17	Ezzedine Mliki and Hassen Mejri	On the exit laws for semi-dynamical systems and Bochner subordination.	Int. J. App. Math. (2010).
18	Ezzedine Mliki, Mohamed Hmissi and hassen Mejri	On the abstract exit equation	Gaz. Math. Ber. 354 (2009), 84 - 98.
19	Ezzedine Mliki, Mohamed Hmissi and hassen Mejri	On the fractional powers of semi-dynamical systems.	Gaz. Math. Ber. 351 (2007), 66- 78.

Refereed Scientific Research Papers Accepted for Publication

#	Name of Investigator(s)	Research Title	Journal	Acceptance Date
1				

Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

#	Name of Investigator(s)	Research Title	Conference and Publication Date
1	Ezzedine Mliki, Maram Alwohaibi, Shaykhah Alajmi	Mixed fractional Brownian motion time-changed by Gamma and Tempered stable process	Submitted to Stochastic Model, 2022
3	Ezzedine Mliki and Manal Al-Ohali	A statistical study on the impact of Covid-19 Pandemic on the evaluation of the effectiveness of online distance learning.	Submitted to statistics survey, 2022

Current Researches

#	Name of Investigator(s)	Research Title
1	Ezzedine Mliki, Manal Al-Ohali and Ridha Hamdi	Statistical competition and forecasting of Arrhenius parameters using liquid mixtures, 2023
2	Ezzedine Mliki and Maram Alwohaibi	The evolution of geometric Asian power options under time changed generalized mixed fractional Brownian motion, 2023
3	Ezzedine Mliki, Noha Aljaber, Aisha Alshehri, Haya Altamimi and Mohamed Majdoub	Subordinators and generalized Heat kernels: Random time change and longtime dynamics, 2023
4	Ezzedine Mliki, Rasha Alessa, Reem Al-Subaie, Maram Alwohaibi and Mohamed	Well-posedness for fractional Hardy-Henon parabolic equations with fractional Brownian noise, 2023

	Majdoub	

Contribution to Scientific Conferences and Symposia

#	Conference Title	Place and Date of the Conference	Extent of Contribution
1	European conference of iteration theory	Milano (Italia) ECIT (2006)	Ergodicity and bochner subordination
2	International conference of analysis stochastic	Hammamet(Tunisia) (2006)	
3	SMT mathematics Tunisian	Sousse (Tunisia) 15-19 march 2010	
4	International conference of analysis stochastic	Hammamet(Tunisia) (2008)	
5	SMT mathematics Tunisian	Sousse (Tunisia) 17-21 march 2008	
6	SMT mathematics Tunisian	Sousse (Tunisia) 19-23 march 2007	

Membership of Scientific and Professional Societies and Organizations

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Teaching Activities

Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Linear Algebra	233N	
2	Set Theory	172N	
3	Introduction to statistics	207N	
4	Probability theory	371N	
5	Statistics and its Applications	374N	
6	Logic and methods of proof	162N	
7	Statistical Inference (I)	MTH341	
8	Calculus I	MATH201	
9	Probability I	STAT 306	
10	Probability II	STAT411	
11	Ordinary Differential Equation	Math302	
12	Survey Methodology	STAT550	
13	Applied statistics	STAT211	
14	Research seminar	Math506	
15	Calculus II	Math205	

16	Statistical Quality Control	Stat450	
17	Sampling Theory	Stat512	

Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)

1	On successful completion of this course students will be able to: 1. Solve linear system of equations by Gauss elimination method. 2. Find basis and dimension. 3. Find the rank of matrix. 4. Find determinant of matrix. 5. Find the inverse of matrix. 6. Apply Gram- Schmidt process on linear independent set. 7. Change of basis. 8. Find the engine values of matrix.
2	Upon successful completion of this course students will be able to: 1. Know the basic concepts of sets. 2. Know the notions of Union, Intersection, Difference Complements and Power Sets. 3. Know the definition of subsets of Cartesian product of sets and relations. 4. Determine the different types of relations. 5. Know the definition of functions. 6. Discuss the different types of functions (One-one function, On to function, Correspondence). 7. Understand infinite sets. 8. Determine countable sets and cardinal number.
3	Upon successful completion of this course students will be able to: 1. Overview on our course. 2. Types of data and frequencies tables. 3. Frequency histogram, frequency curve, and frequency polygon. 4. Measures of central tendency: mean, quartiles, median, mode. 5. Measures of dispersion: Range, variance, standard deviation, coefficient variation. 6. Pearson's skewness coefficients. 7. Linear Correlation. 8. Simple linear Regression.

	9. Principles of probability. 10. Binomial distribution and normal distribution
4	Upon successful completion of this course students will be able to: 1. Probability – sample spaces and events, probability axioms, conditional probability, Bayes' Theorem. 2. Discrete random variables 3. Special cases of discrete distributions – uniform, binomial, geometric, hyper-geometric, Poisson 4. Continuous random variables 5. Special cases of continuous distributions – uniform, gamma, exponential, normal 6. Bivariate distributions, marginal and conditional mass and density functions 7. Transformations of random variables
5	Upon successful completion of this course students will be able to: 1. Data Distributions, data relationships, producing data. 2. Measures of Association: nominal and ordinal data. 3. Introduction for using SPSS. 4. Introduction to Inference: confidence intervals, testing of hypothesis. 5. Inference of the Mean, Compering Two Means 6. Inference of the Proportions, Compering Two Proportions 7. Inference of the Variance, Compering Two Variances 8. Analysis of variance (ANOVA) 9. Chi-square tests: goodness of fit tests, test for independence and homogeneity. 10. Some nonparametric tests. 11. Inference for Regression
6	Upon successful completion of this course students will be able to: 1. Definition of statement and identification of simple (atomic) and compound statement. 2. Standard connectives used to form compound statements from atomic propositions. 3. Truth tables. 4. Tautology and its principal results. 5. Predicate logic and quantifiers 6. Methods of proof: Formal proof, informal proof, conditional proof, indirect proof, proof by counter example, mathematical induction. 7. Mathematical induction.

7	Upon successful completion of this course students will be able to: 1. Random sampling and the sampling distributions: t, chi-square, and F 2. Point Estimation 3. Properties of estimators, unbiased ness, consistency and efficiency, lower bound of the variance of unbiased estimators 4. Methods of estimation: maximum likelihood, moments, least squares 5. Interval estimation 6. pivotal quantity 7. Testing hypotheses 8. The Bayesian Approach
8	Upon successful completion of this course students will be able to: 1. Introduction to the course (description of the course, discussion on the textbooks related to the course, teaching strategies and assessment methods). A general review of some essential notions. 2. Limits and continuity of function of a single variable. 3. Differentiation, differentiation rules, derivative of trigonometric functions, the chain rule, implicit differentiation. 4. Differentiation of inverse functions and logarithms 5. Application of derivative, the Mean Value Theorem, monotonic functions, concavity, and curve sketching. 6. Indeterminate forms 7. Applied optimization, antiderivative.
9	Upon successful completion of this course students will be able to: 1. Basic classical models of probability. 2. Random experiment, Sample space, Events, Axioms of probability, definition of probability. 3. Conditional probability, Bayes theorem, Random variables and their types, Mathematical expectation. 4. Independent random variables, central and noncentral moments, measures of skewness and kurtosis. 5. Distributions of function of one and two random variable, moment generating functions, probability generating function, Special discrete and continuous distribution. 6. Random vectors and their distributions, Marginal, and conditional distributions. 7. Transformations. 8. Law of large numbers and the central limit theorem.

10	Upon successful completion of this course students will be able to: 1. General review on some essential notions related to the course. 2. Sequences of events and their limits. Continuous random vector. 3. Limit theorems for sums of random variables. 4. Principles of stochastic processes. 5. Elements of convergence and integration based on stochastic processes. 6. Construction of stochastic processes. 7. Poisson process. 8. Markov chains and their applications. 9. Queues. 10. Order statistics.
11	Upon successful completion of this course students will be able to 1. Introduction to ordinary differential equations (classification and creation). 2. ODEs of first order. 3. ODEs of second order: general solution of linear equations of second order. 4. differential equations with constant coefficients. 5. Method of variation of constants. 6. Method of undetermined coefficients. 7. ODEs of higher order 8. Reduction of order method. 9. Series solutions of linear equations. 10. 1D Wave equation. 11. 2D Wave equation.
12	Upon successful completion of this course students will be able to 1. Ethical issues in scientific research. 2. Planning of surveys, questionnaire construction and methods of data collection. 3. Fieldwork procedures. 4. Sources of errors. 5. Basic ideas of sampling, sample size determination and cost. 6. Inference and Error in Surveys, Research problem, goals, questions, and hypotheses for quantitative and qualitative studies. 7. Sampling frames, Sampling Design and Sampling Error–types of Variables, data, and measures.

	8. Computerized Data Descriptive a statistical inference of sample data and analysis of results 9. One and two analyses of variance. 10. Linear and multiple regression analysis. 11. writing the report-Using statistical packages to solve the problems.
13	Upon successful completion of this course students will be able to: 1. SPSS tools and Excel. 2. Descriptive data. 3. Chart. 4. Sampling. 5. Inference. 6. Parametric test one sample. 7. Parametric test two samples. 8. Non-parametric tests. 9. ANOVA. 10. Regression and correlation analysis 11. Chi-square tests.

Postgraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1	Statistical Methods chemistry	650N	
2	Advanced Probability Theory	Math 620	
3	Stochastic process	Math623	
4	Stochastic calculus	Math630	
5	Bio statistics and experimental design	BIOL571	

Brief Description of Postgraduate Courses Taught: (Course Title – Code: Description)

1	Upon successful completion of this course students will be able to: 1. Descriptive Statistics for Chemistry, Application with SPSS 2. Probability distribution and their application: Normal distribution and standard normal distributions, T-distribution, chi-square distribution, Fisher-distribution 3. Sampling distributions 4. Confidence intervals 5. Statistical hypotheses testing 6. Some nonparametric tests. 7. Analysis of variance (ANOVA)

	8. Inference for Regression 9. General applications using SPSS.
2	Upon successful completion of this course students will be able to: 1. Conditional probability. 2. Discrete and continuous random variables. 3. Joint and conditional distributions. 4. Standard discrete and continuous families of distributions and their contexts. 5. Law of large numbers and central limit theorem. 6. Conditional expectations and martingales. 7. Renewal theory. 8. Reliability theory.
3	Upon successful completion of this course students will be able to: 1. Poisson process and approximation. 2. Martingales. 3. Renewal theory. 4. Random walks. 5. Markov chains. 6. Branching processes. 7. Brownian motion and diffusions. 8. Queening.
4	Upon successful completion of this course students will be able to: 1. Ito Integrals: Construction of the Ito integral, some properties and extensions of the Ito integral. 2. The Ito formula and the martingale representation theorem: te 1-dimensional Ito formula, the mult-dimensional Ito formula and the martingale representation theorem. 3. Stochastic Differential equations: Examples and some solution methods, an existance and uniqueness result, weak and strong solution. 4. Diffusion: The Markov property, the strong Markov property, the generator of an Ito Diffusion, The Dynkin formula. 5. Martingale problem and Girsanov Theorem.
5	1. Descriptive Methods for Categorical Data 2. Descriptive Methods for Continuous Data 3. Estimation of Parameters 4. Introduction to Statistical Tests of Significance 5. Comparison of Population Proportions

	6. Comparison of Population Means 7. Analysis of Variance 8. Regression Analysis 9. Study Designs

Course Coordination

#	Course Title and Code	Coordination	Co-coordination	Undergrad.	Postgrad.	From	to
1	Applied statistics	✓					
2	Introduction to statistics	✓					
3	Probability II	✓					
4	Linear Algebra	✓					
5	Statistical Quality Control	✓					
6	Sampling Theory	✓					
7	Probability I	✓					

Student Academic Supervision and Mentoring

#	Level	Number of Students	From	to
1	9 (Research seminar)	5	17-1-2020	14-5-2020
2	9 (Research seminar)	3	17-1-2020	14-5-2020
3	9 (Research seminar)	5	17-1-2020	14-5-2020
4	9 (Research seminar)	4	17-1-2020	14-5-2020

Supervision of Master and/or PhD Thesis

#	Degree Type	Title	Institution	Date
1	Master	Statistical Properties of Some Stochastic Models, Subordination and Applications	Department of Mathematics, College of Science IAU	2019-2020

Administrative Responsibilities, Committee and Community Service

(Beginning with the most recent)

Administrative Responsibilities

#	From	To	Position	Organization

Committee Membership

#	From	To	Position	Organization
1	1/10/2016	31/05/2016	member	committee for the preparation and the design of the statistics curriculum of preparatory year.
2	1/10/2016	30/10/2016	member	Committee of Graduate
3	15/9/2020		member	The committee for review and structuring of academic programs at college of science IAU

4	15/11/2020	20/8/2023	member	committee for the preparation and the design of the statistics and data science program.
5	1/06/2023	1/06/2023	member	Teaching and Learning

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

1	Latex, Beamer
2	excel, SPSS, Math lab, Minitab, R, Origin.

Last Update

15/ 02/2024