

# الخطة البحثية التنفيذية الخماسية لقسم الرياضيات 2023/2018

الهيكلية العامة للخطة البحثية الخمسية المجمعية لقسم  
الرياضيات 2023/2018

الكود	الأنشطة	العناصر	المؤشرات
1-1-1-1	Solve problems on analytic functions defined in the geometric function theory	1-1-1 Complex Analysis	1-1 Pure Mathematics
1-1-1-2	Geometric properties of some analytic functions defined by different operators		
1-1-1-3	A study on properties for some subclasses of analytic functions		
1-1-1-4	Subordination properties for the Erdelyi-Kober type integral		
1-1-1-5	An application of a Poisson distribution series on subclasses of univalent functions		
1-1-1-6	Inclusion relation for certain subclasses of uniformly p-valent analytic functions involving the linear operator		
1-1-2-1	Fuzzyfication of topological concepts	1-1-2 Topology and its applications & rough sets Theory	
1-1-2-2	Topological precision Rough set		
1-1-2-3	Studying of topological concepts for continuous mapping		
1-1-2-4	Generalized topological spaces		
1-1-2-5	Topological approach for rough set theory		
1-1-3-1	Stability analysis of ordinary differential equations	1-1-3 Differential equations	
1-1-3-2	Oscillation of functional differential equations		
1-1-3-3	Global attractively and stability of functional differential equations		
1-1-3-4	Properties of solution of equations with distributed delays		
1-1-3-5	Fractional-order differential equations and their applications		
1-1-3-6	Fractional order equations and dynamical Systems		
1-1-3-7	The fractional-order epidemic models		
1-1-3-8	Dynamic analysis of fractional-order biological and economic systems		
1-1-3-9	Dynamical analysis of fractional order biological and economic models on complex networks		
1-1-3-10	Epidemics and Systemic Risk		
1-1-4-1	On advanced approaches for solving multi-objective decision making	1-1-4 Operations Research	

الكود	الأنشطة	العناصر	المؤشرات
1-1-4-2	Analytic methods for optimizing waiting time and queue length		
1-1-4-3	Performance evaluation and optimization for some queuing models		
1-1-4-4	Mean and variance of waiting time and their optimization		
1-1-4-5	On The Solution of Discrete Vector Optimization Problems		
1-1-4-6	Shortest Path Problems		
1-1-4-7	Parallel Computations		
1-1-5-1	Numerical solution of ordinary differential equations		
1-1-5-2	Numerical solution of partial differential equations		
1-1-5-3	Galerkin methods for linear and nonlinear partial differential equations		
1-1-5-4	Numerical solution of nonlinear fractional differential equations		
1-1-6-1	Spectral analysis of some matrices as operators on sequence spaces	1-1-6 Functional Analysis	
1-1-6-2	Sequence spaces derived by the domain of certain matrices		
1-1-6-3	Basis properties of specific system in certain Banach spaces		
1-1-6-4	Sequence spaces and their matrix transformations.		
1-1-6-5	Application of the summability theory to the solvability of certain sequence spaces equations with matrix operators.		
1-1-6-6	Function Space		
1-1-7-1	Classification of irreducible representations of non-associative triple systems.	1-1-7 Algebra	
1-1-7-2	Enveloping algebras of n-Lie algebras.		
1-1-7-3	Classification of n-ary non- associative operations.		
1-1-7-4	Constructing new alternating algebra structures and discovering natural n-ary generalizations of Lie algebras.		
1-1-7-5	Almost distributive lattices		
1-1-7-6	Variety on some type of algebras		
1-1-8-1	Partial differential equations and their applications	1-1-8 Partial Differential Equations	

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1-1-8-2	Analytic solutions of Partial differential equations		
1-1-8-3	Approximate solutions of nonlinear partial differential equations		
1-1-9-1	Differential geometry and its applications	<b>1-1-9 Differential Geometry</b>	<b>1-2 Applied Mathematics</b>
1-1-9-2	Grassmannian variables and their applications		
1-1-10-1	Analytic solutions of difference Equations	<b>1-1-10 Difference Equations</b>	
1-1-10-2	Difference equations and their applications		
1-1-10-3	Stability analysis of difference equations		
1-1-10-4	Oscillation of difference equations		
1-2-1-1	Stability of dust ion acoustic waves in different dusty plasma systems with different particles distributions.	<b>1-2-1 Plasma</b>	
1-2-1-2	Modulation of ion acoustic waves and studying the generation of different waves (Soliton, Stock, Rouge,...)		
1-2-1-3	Arbitrary amplitude dust acoustic solitary waves in a dusty plasma with a streaming ion beam.		
1-2-1-4	Study of different effects for different plasma systems e.g. change fluctuating quantum effect, using different approximation techniques.		
1-2-2-1	Study the elastic bodies and the effect of some external influences on them such as heat, electric field, magnetic field.	<b>1-2-2 Theory of Elasticity</b>	
1-2-2-2	Study the interference in the theory of thermo-elasticity		
1-2-2-3	Viscous elastic response to composite layers with nonhomogeneous layers		
1-2-3-1	Study controlling dynamical systems vibrations under the influence external forces	<b>1-2-3 Theoretical Mechanics</b>	
1-2-3-2	On The Orbital Stability Of Pendulum-Like Vibration Of A Rigid Body Carrying A Rotor		
1-2-4-1	Peristaltic transportation of fluid with variable viscosity in presence of external forces.	<b>1-2-4 Fluid Dynamics</b>	
1-2-4-2	Peristaltic transportation of fluid with variable viscosity in presence of an endoscope.		

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1-2-4-3	Peristaltic transportation of non-Newtonian fluid in presence of external forces.		
1-2-4-4	Peristaltic transportation of non-Newtonian fluid in presence of an endoscope.		
1-2-5-1	On quantum game theory and its applications	1-2-5 Statistical Mechanics	
1-2-6-1	Some Models of Quantum information		
1-2-6-2	Numerical Simulation For Some Quantum Information Models	1-2-6 Quantum Mechanics	
1-2-6-3	Quantum Algorithms and Applications		
1-2-7-1	Study of special theory of relativity and its application	1-2-7 Special theory of Relativity	
1-2-8-1	Dark Energy	1-2-8 General theory of Relativity	
1-2-9-1	Inertia, Electromagnetism and Fluid Dynamics	1-2-9 Electrodynamics	
1-2-10-1	Lunar Trajectories of Spacecraft for Navigation, with Application to Chandrayaan-2	1-2-10 Space Mechanics	
1-3-1-1	On Markov chains random walk with some applications		
1-3-1-2	On the Markov chains gambler's ruin problem		
1-3-1-3	Delayed random walk		
1-3-1-4	Correlated random walk		
1-3-1-5	Transition probability matrices for MC-RW		
1-3-1-6	Correlated Markov chains ruin problem		
1-3-1-7	Trinomial random walk probabilities		
1-3-1-8	Trinomial random walk associated with the game of roulette		
1-3-1-9	On the frequency count for MC-RW with catastrophes		
1-3-1-10	Tridiagonal matrices and MC-RW		
1-3-1-11	Tridiagonal matrices and difference equations		
1-3-2-1	Queuing analysis and computer simulation		
1-3-2-2	Analysis of two queues in parallel and in series		
1-3-2-3	Numerical study of two queues in parallel and in series (Networks)	1-3-2 Queuing Theory	

1-3 Statics

الكود	الأنشطة	العناصر	المؤشرات
1-3-2-4	Numerical and explicit analysis of a fluid queue driven by Markovian queues		
1-3-2-5	Queuing with impatient and catastrophes		
1-3-2-6	Queues in series		
1-3-2-7	Chemical queues		
1-3-2-8	Two dimensional queues		
1-3-3-1	Statistical Analysis of Time Series	<b>1-3-3 Time Series and forecasting</b>	
1-3-3-2	On the Parametric analysis of Chaotic time series		
1-4-1-1	Image merging for feature extraction	<b>1-4-1 Image Processing and its application</b>	<b>1-4 Computer Science</b>
1-4-1-2	Image compression		
1-4-1-3	Image restoration		
1-4-1-4	Image classification		
1-4-1-5	Image segmentation		
1-4-1-6	Image detection		
1-4-2-1	Pattern Detection	<b>1-4-2 Pattern Detection and Recognition</b>	
1-4-2-2	Pattern Recognition		
1-4-2-3	Face Detection		
1-4-2-4	Animal Face Detection		
1-4-2-5	Face Recognition		
1-4-2-6	Animal Face Recognition		
1-4-2-7	Digit Recognition		
1-4-2-8	Currency Detection and Recognition		
1-4-3-1	speechrecognition	<b>1-4-3 Speech recognition</b>	
1-4-3-2	Emotion speechrecognition		
1-4-4-1	An Statistical Approach for Arabic Language Processing	<b>1-4-4 Natural language processing</b>	
1-4-4-2	OCR Recognition		
1-4-4-3	Arabic Summarization		
1-4-5-1	Intelligent agents	<b>1-4-5 Artificial Intelligence</b>	
1-4-5-2	Computational Intelligent		
1-4-5-3	Cognitive Interaction with Robots		
1-4-5-4	Constraint Processing and Programming		
1-4-5-5	Intelligent Data Analysis and Data Mining		
1-4-5-6	Intelligent Decision Support Systems		
1-4-5-7	Intelligent System		
1-4-5-8	IOT		
1-4-5-9	Computational Vision		
1-4-5-10	Human Language Technology		
1-4-5-11	Advanced Machine Learning		
1-4-5-12	Multiagent Systems		
1-4-6-1	Cloud computing	<b>1-4-6 Database and</b>	

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1-4-6-2	Database Security	Database System	
1-4-6-3	Big Data		
1-4-6-4	Cyber Security		
1-4-6-5	Database Management System		
1-4-6-6	Computer security and protection		
1-4-6-7	Cryptography		
1-4-7-1	Computer language design		
1-4-7-2	Parallel computing		
1-4-8-1	Remote sensing	1-4-8 Remote sensing	
1-4-9-1	Operating systems	1-4-9 Operating systems	
1-4-9-2	Android programming		
1-4-10-1	Computer Networks	1-4-10 Computer Networks	
1-4-11-1	Bioinformatics	1-4-11 Bioinformatics	
1-4-11-2	Bioinformatics mathematical models		

قائم بعمل رئيس قسم الرياضيات

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