


## **Contact Information**

	<p>Dr. Mohammed Nokhas Murad is an assistant professor in mathematics. He holds PhD. in Mathematics and D.Sc. in Science. Based on his Ph.D. Dissertation, the author has completed five books entitled Introduction to Topological Dynamical Systems I, II, III, IV, V. He is interested in Differential Manifolds, Topological Dynamics, Catastrophe theory, General Topology, Qualitative, Measure Theory and sustainable development of mathematical science.</p>
---	---

**Name:** Mohammed Nokhas Murad Kaki

**Rank:** Assistant Professor Sep. / 05 / 1998

**E-Mail Address:** [muradkakaee@yahoo.com](mailto:muradkakaee@yahoo.com)

**My Google Scholar :**

[scholar.google.com/citations?user=G4S2uIsAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=G4S2uIsAAAAJ&hl=en&oi=ao)

**My LinkedIn.com :**

<https://www.linkedin.com/in/muradkaki>

**My ResearchGate:**

[https://www.researchgate.net/profile/Mohammed\\_Murad3](https://www.researchgate.net/profile/Mohammed_Murad3)

**My Google Profile:**

<https://plus.google.com/112848325547148927302>

## **II : Subjects which have been taught to graduate (M. Sc.)students:**

- Differential Manifolds:  
[https://scholar.google.com/citations?view\\_op=search\\_authors&hl=en&mauthors=abel:differential\\_manifolds](https://scholar.google.com/citations?view_op=search_authors&hl=en&mauthors=abel:differential_manifolds)
- Topological Dynamics:  
[https://scholar.google.com/citations?view\\_op=search\\_authors&hl=en&mauthors=abel:topological\\_dynamics](https://scholar.google.com/citations?view_op=search_authors&hl=en&mauthors=abel:topological_dynamics)
- Catastrophe Theory
- General Topology
- Chaos Theory
- Qualitative Theory

## **M.Sc. Thesis Title**

“On the Treatment of instability of phenomenon by methods of Catastrophe Theory”

## **PhD. Dissertation Title**

"Introduction to Topological Dynamical Systems”

**Note:** Based on this Dissertation I published the following books:

1. "Introduction to Topological Dynamical Systems I" has been published as a book, New York, USA. ISBN: 978-1-940366524.

**Publisher: Science Publishing Group.**

2. "Introduction to Topological Dynamical Systems II" has been published as a book in Germany. With ISBN: 978-3-659-80680-3.

**Publisher: Lambert academic publisher, Germany**

3. "Introduction to Topological Dynamical Systems III" which is not published yet.
4. Dynamics in Differential Manifolds has been published as a book in Germany. With ISBN: 978-3-330-00034-6.
5. "Introduction to Topological Dynamical Systems IV" which is not published yet.

#### **Some Titles of Books Not Published Yet:**

1. "Introduction to Topological Dynamical Systems V"
2. Weak Structure of Dynamical Systems I
3. Weak Structure of Dynamical Systems II
4. New Insights into Physical Science I
5. New Insights into Physical Science II

#### **DSc research Work**

**Research work is about 40 international research papers.**

**Science Research work for Assistant Prof Dr. Mohammed Nokhas**

**Murad Kaki**

[1] Mohammed Nokhas Murad Kaki, (2015), INTRODUCTION TO TOPOLOGICAL DYNAMICAL SYSTEMS I; **Book**, ISBN: 978-1-940366-52-4, PUBLISHER: SCIENCE PUBLISHING GROUP, NEW YORK, USA, [book@sciencepublishinggroup.com](mailto:book@sciencepublishinggroup.com)

**Author:**

**Dr. Mohammed Nokhas Murad Kaki**, the lead author of this book, is assistant professor of Mathematics department, Faculty of science and science Education, University of Sulaimani, Iraq. He holds MSc, **Ph.D.** degree in mathematics; Doctorate degree in Science. He is interested in sustainable development of mathematical science..

[2] Mohammed Nokhas Murad Kaki, (2016), Dynamics in differential Manifolds \ Book \ ISBN: 978-3-330-00034-6-full \ Lambert Academic Publisher \ Germany.

<https://www.amazon.com/Dynamics-Differential-Manifolds-Mohammed-Nokhas/dp/3330000341>

[3] Mohammed Nokhas Murad Kaki, (2017), INTRODUCTION TO TOPOLOGICAL DYNAMICAL SYSTEMS II; **Book**, ISBN: 978-3-659-80680-3.

**Publisher: Lambert academic publisher / Germany**

<a href="https://www.amazon.com/Introduction-Topological-Dynamical-Systems-II/dp/3659806803">https://www.amazon.com/Introduction-Topological-Dynamical-Systems-II/dp/3659806803</a> <a href="http://tqa.univsul.edu.iq/login">http://tqa.univsul.edu.iq/login</a>	
[4]	<b>Mohammed Nokhas Murad Kaki , Reyadh D. Ali.</b> Topological Dynamics and the Space of Continuous Mappings, IOP Science, journal of physics, conference series. Vol.1591 No.1(2020/7/1), pp. 1-8
[5]	<b>Mohammed Nokhas Murad Kaki,</b> New Types of Transitive Maps and Minimal Mappings, Global journal of research in engineering. Vol 19, No. 2(2019/4/8), pp. 43-46
[6]	<b>Mohammed Nokhas Murad Kaki,</b> Some New Types of Transitivity and Minimality, OAlib journal, Vol 5(2018) Pp.1-10
[7]	<b>Mohammed Nokhas Murad Kaki,</b> New Concepts of Alpha-Chaotic Maps, Journal of Multidisciplinary Engineering Science and Technology (JMEST) ISSN: 3159-0040 Vol. 2 Issue 2. (2015), pp.187-190. Germany.
[8]	<b>Mohammed Nokhas Murad Kaki,</b> Catastrophic Types Depending on Degree of Non-Linearity. <i>Pure and Applied Mathematics Journal.</i> , Special Issue: Mathematical Theory and Modeling. Vol. 3, No. 6-1, 2014, pp. 24-27.. New York, USA.
[9]	<b>Mohammed Nokhas Murad Kaki,</b> (2014) , New types of chaotic maps, pure and applied mathematics Journal, Science PG, Vol.3, No.1, pp.20-23. USA
[10]	<b>Mohammed Nokhas Murad Kaki,</b> (2014), Two new types of chaotic maps and minimal systems, pure and applied mathematics Journal, Science PG, Vol.3, No.1, pp.7-12 . USA.
[11]	<b>Mohammed Nokhas Murad Kaki,</b> (2014) , New types of chaos and non-wandering points in topological spaces , pure and applied mathematics Journal, Science PG, USA.
[12]	<b>Mohammed Nokhas Murad Kaki,</b> (2014) , Relationship between New Types of Transitive and Chaotic Maps Global Journal of Researches in Engineering (5 ) F Volume XIV Issue V Version 1, pp/ 25-30.
[13]	<b>Mohammed Nokhas Murad Kaki,</b> (2014), Topologically Beta-Type Transitive Maps, International Journal of Latest Trends in Engineering, Science and Technology, ISSN: 2055-530X , Volume 1, Issue 5, 1-6, UK
[14]	<b>Mohammed Nokhas Murad Kaki,</b> (2014) , Conceptions of Transitive Maps in Topological Spaces, International Journal of Electronics Communication and Computer Engineering, Volume 5, Issue 1, ISSN (Online): 2249–071X, ISSN (Print): 2278–4209.
[15]	<b>Mohammed Nokhas Murad Kaki,</b> (2014) , New types of chaotic maps on topological spaces, International Journal of Electrical and Electronic Science, American association for science and technology, (AASCIT) 2014; 1(1): 1-5, USA
[16]	<b>Mohammed Nokhas Murad Kaki,</b> (2014/01/30), New conceptions of transitivity and minimal mappings, Science Research, Science PG, Vol.2 No. 1 pp. 1-6, USA.
[17]	<b>Mohammed Nokhas Murad Kaki,</b> (2013, Relationship between New Types of Transitive Maps and Minimal Systems, International Journal of Electronics Communication and Computer Engineering Volume 4, Issue 6, ) pp. 1689-1695.

[18]	<b>Mohammed Nokhas Murad Kaki</b> , (2013), Introduction to weakly b-transitive maps on topological space, Science Research, Science PG, Vol. 1, No. 4, (2013). p. 59-62, USA.
[19]	<b>Mohammed Nokhas Murad Kaki</b> , (2013) , NEW TYPES OF $\Lambda$ - TRANSITIVE MAPS International Journal of Research in Electrical and Electronics Engineering (ISTP-JREEE) ISSN: 2321-2667. Volume 2, Issue 5, Sept. 2013 pp.19-24.
[20]	<b>Mohammed Nokhas Murad Kaki</b> , (2013) , Stability and Existence of Periodic Solutions in Non-linear Differential Equations. International Journal of Emerging Technology and Advanced Engineering. Volume 3, Issue 6, pp. 574-577.
[21]	<b>Mohammed Nokhas Murad Kaki</b> , (2013) , ON SOME NEW $\gamma$ -TYPE MAPS ON TOPOLOGICAL SPACES Journal of Mathematical Sciences: Advances and Applications Vol. (20 ), pp. 45-60
[22]	<b>Mohammed Nokhas Murad Kaki</b> , (2013), Topologically $\delta$ -Type Functions and topologically Conjugacy. Canadian Journal on Computing in Mathematics, Natural Sciences, Engineering and Medicine Vol. 4 No. 3,
[23]	<b>Mohammed Nokhas Murad Kaki</b> , (2013) , Topologically $\alpha$ - Type Maps and Minimal $\alpha$ -Open Sets , Canadian Journal on Computing in Mathematics, Natural Sciences, Engineering and Medicine Vol. 4 No. 2, pp. 177-183
[24]	<b>Mohammed Nokhas Murad Kaki</b> , (2012), New Types of Transitive Functions and Minimal Systems, International Journal of Basic & Applied Science IJBAS-IJENS Vol. 12 No. 04 (2012). pp. 53-58.
[25]	<b>Mohammed Nokhas Murad Kaki</b> , (2012) , Mathematical catastrophe with Applications, Gen. Math. Notes, Vol. 11, No. 2, August 2012, pp. 35-46 ISSN 2219-7184; Copyright © ICSRS Publication, 2012.
[26]	<b>Mohammed Nokhas Murad Kaki</b> , (2012) , Introduction to $\theta$ -Type Transitive Maps on Topological spaces. International Journal of Basic & Applied Sciences IJBAS-IJENS Vol:12 No:06 pp. 104-108 .
[27]	<b>Mohammed Nokhas Murad Kaki</b> , (2012), New Types of $\delta$ -Transitive Maps, International Journal of Engineering & Technology IJET-IJENS Vol:12 No:06, pp.134-136.
[28]	<b>Mohammed Nokhas Murad Kaki</b> , (2012) , Topologically $\alpha$ - Transitive Maps and Minimal Systems <i>Gen. Math. Notes, Vol. 10, No. 2, pp. 43-53 ISSN 2219-7184; Copyright © ICSRS.</i>
[29]	<b>Mohammed Nokhas Murad Kaki</b> , (2012) , On the Catastrophic model and Stability, International Journal of Basic & Applied Science IJBAS-IJENS Vol. 12 No. 03 pp. 64-67
[30]	<b>Mohammed Nokhas Murad Kaki</b> , (2011), On Cusp Catastrophe Model and Stability, International Journal GMN Vol.2 ,No 2. pp. 73-82
[31]	<b>Mohammed Nokhas Murad Kaki</b> , (2011) , On Topological $\alpha$ -Transitive Functions , Journal of Kurdistan Academic, Vol. 9, No. 1
[32]	<b>Mohammed Nokhas Murad Kaki</b> , (2006), Fixed Point Theorem and Stability, Journal of Kufa.
[33]	<b>Mohammed Nokhas Murad Kaki</b> , (2006) , On $\alpha$ - Transitivity for dynamical systems Journal of Babylon Vol.13, No.3.
[34]	<b>Mohammed Nokhas Murad Kaki</b> , (2003), Some Catastrophic types and Stability, Journal of Al-Qadisiya for Pure Sciences, Vol.8.

[35]	<b>Mohammed Nokhas Murad Kaki</b> , (2003) , Non-liner Dynamics and Cusp Catastrophe, Journal of College of Education, University of Al-Mustansiriya , NO.2, Page 101-110
[36]	<b>Mohammed Nokhas Murad Kaki</b> , (2002) , Periodic Solution for Non-Linear Lorenz Equation, Journal of Al-Qadisiya, College of Science ,Vol. 7, No. 3 Page 1324-1326
[37]	<b>Mohammed Nokhas Murad Kaki</b> , (2002) , Cusp Catastrophe and Stability, Ibn Al – Haitham Journal for Pure and Applied Sciences , University of Baghdad ,Vol.15 ,No.4G, pp. 53-58
[38]	<b>Mohammed Nokhas Murad Kaki</b> , (2002), On the Stability of Periodic Solutions of Nonlinear Differential Equations, Journal of Babylon
[39]	<b>Mohammed Nokhas Murad Kaki</b> , (2003) , Structural Stability of some Vector Fields, Babylon Journal for Pure and Applied Science ,Vol.8, No.3 , Page 401-408
[40]	<b>Mohammed Nokhas Murad Kaki</b> , (2002),, New Model for Inhomogeneous Media, Journal of Al-Qadisiya, College of Science , Vol.7 No. 3, Page 1385-1388
[41]	<b>Mohammed Nokhas Murad Kaki</b> , (2002), Jump Phenomena of Frequency Response Curve(FRC), Vol.7, No.3
[42]	<b>Mohammed Nokhas Murad Kaki</b> , (2001), On the Stability of Response Manifold of Dynamical Systems Babylon University for Pure Science Vol.7, No.3
[43]	<b>Mohammed Nokhas Murad Kaki</b> , (1998) , Non-liner Differential Equations and Physical Problems Journal of Babylon University for Pure Sciences Vol.3, No.3, PP. 515-518
[44]	<b>Mohammed Nokhas Murad Kaki</b> , Measure Theory <a href="http://www.google.com/#q=university+of+sulaimani+measure+theory">http://www.google.com/#q=university+of+sulaimani+measure+theory</a>
[45]	<b>Mohammed Nokhas Murad Kaki</b> , (2013), _Two New Types of Transitive Maps and Minimal Systems. RUL <a href="http://ebookbrowse.net/ty/type-a-conference">:http://ebookbrowse.net/ty/type-a-conference</a>
[46]	<b>Mohammed Nokhas Murad Kaki</b> , (2014), Relationship between New Types of Chaotic Maps, Journal of Multidisciplinary Engineering Science and Technology (JMEST) ISSN: 3159-0040 Vol. 1 Issue 3, October – 2014,
[47]	<b>Mohammed Nokhas Murad Kaki</b> , (2017) , Fine Transitive and Weakly Fine Mixing Sets, Wulfenia Journal, accepted
[48]	<b>Mohammed Nokhas Murad Kaki</b> , (2002), Orlicz Spaces For Measurable Function, Journal of Al-Qadisiya, College of Science, Vol. 7 No. 4 (2002) pp. 8-11
[49]	<b>Mohammed Nokhas Murad Kaki</b> , ,(26/6/2018), Chaos, Mixing, Weakly Mixing and Exactness, Oalib Journal, China (2018) , Vol. 5, No. 6, pp.1-6.
[50]	<b>Mohammed Nokhas Murad Kaki</b> , (8/3/2016) ,New Types of Lambda-transitive and Weakly Lambda Mixing Sets, Oalib Journal, Chaina, (2016) pp. 1-5.

[51]	<b>Mohammed Nokhas Murad Kaki</b> , (12/12/2012) , New Types of $\hat{I}'$ - Transitive Maps, International Journal of Engineering & Technology, Vol. 12. No. 6
[52]	<b>Mohammed Nokhas Murad Kaki</b> , (2018), Bi supra Transitive and Semi Minimal Systems, OAlib Journal, China (2018) , Vol. 5, No. 7, pp.1-6.
[53]	<b>Mohammed Nokhas Murad Kaki</b> , (2018), Transitive Maps on Differential Manifolds, 3 <sup>rd</sup> International Conference of Mathematics and Computer science. Charmo University / Sulaimani / Iraq.

I participated in the following Conferences:

- 1) The first conference of College of Education –University of Kufa
- 2) The 7th Conference of College of Science, University of Baghdad
- 3) The Conference of Al-Habanyia, University of Al-Anbar
- 4) Third International Conference of Mathematics and Computer science. Charmo University / Sulaimani / Iraq.

I also supervised two of M.Sc. thesis Submitted to the College of Education, Math. Department, University of Kufa, as follows:

- 1) (2005) Solving Special Kinds of Second Order Differential Equations

Using the Substitution  $y = e^{\int z dz}$

- 2) (2005) Some Numerical Methods for Evaluating Single and Double Integrals with Singularity

I also executed a number of scientific evaluations for Ph.D. and MSc Thesis

**Languages:**

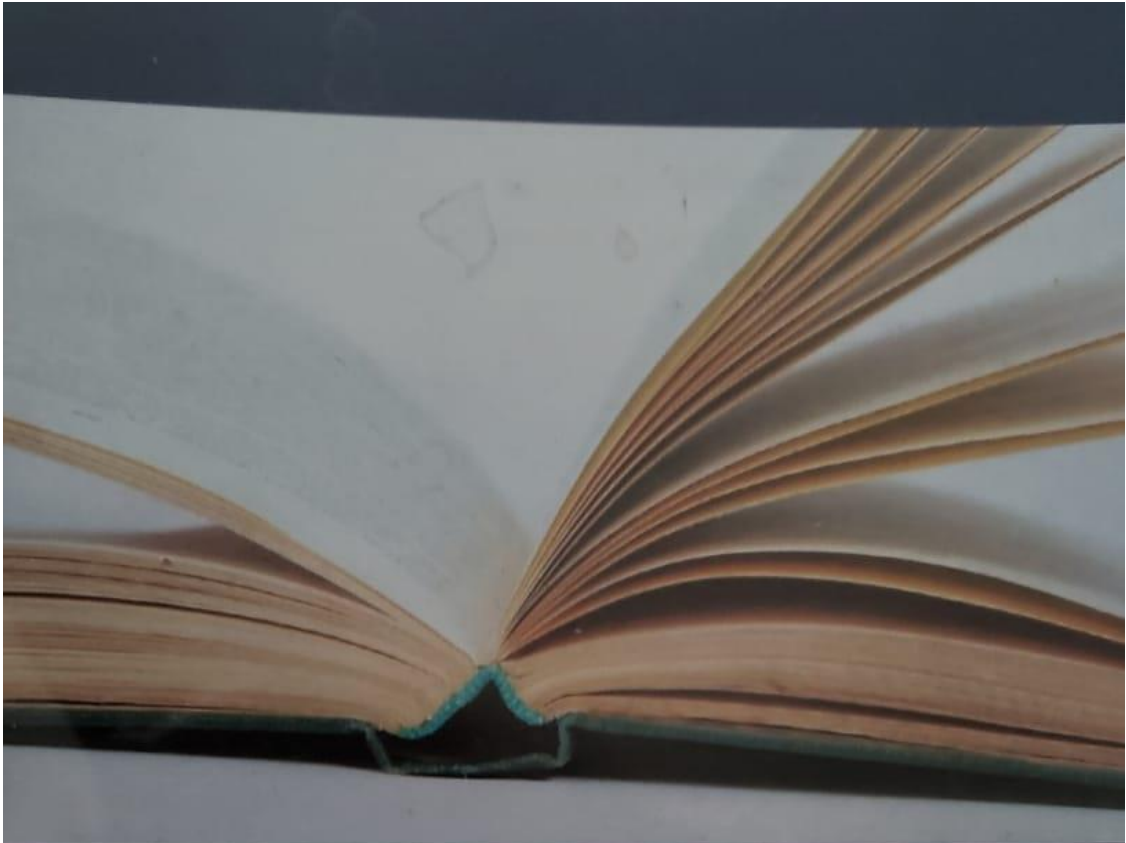
- Arabic
- English

**Some Titles of My Books as follows:**

Mohammed Nokhas Murad Kaki

# Introduction to Topological Dynamical Systems I





Mohammed Nokhas Murad Kaki

# Introduction to Topological Dynamical Systems II

Dynamics Topology

 **LAP LAMBERT**  
Academic Publishing



In this book, new types of transitivity, minimality, exactness, and chaoticity are introduced and studied. This is intended as a survey article on topological transitivity and chaoticity of a discrete system given by irresoluteness self-map of a compact topological space. On one hand, it introduces postgraduate students to the study of new types of topological transitivity, minimal systems and chaotic maps and gives an overview of results on the topic, but, on the other hand, it covers some of the recent developments of topological dynamics, technology, electronic and computer science



Based on his PhD. Dissertation, the author has completed the second book entitled Introduction to Topological Dynamical Systems II. To continue the research and deepen the theories mentioned in these books, the author is now working on another book entitled Introduction to Topological Dynamical Systems III.



978-3-659-80680-3



Mohammed Nokhas Murad Kaki  
Karwan H. F. Jwamer

# Dynamics in Differential Manifolds

 **LAMBERT**  
Academic Publishing

On the one hand, this book introduces postgraduate students to the study of new types of topological transitivity, minimal systems and chaotic maps and gives an overview of results on the topic, but, on the other hand, it covers some of the recent developments of dynamics in differential manifolds, technology, electronic and computer science. The researcher introduced and defined a new type of transitive map called diffeotransitive and investigate some of its properties.

Dr. Mohammed Nokhas Murad Kaki, the author of this book, is Assistant Professor of Mathematics department, College of Science and Science Education, University of Sulaimani, Iraq. He holds a M.Sc., Ph.D. degree in Mathematics and D.Sc. degree in Science. He is interested in sustainable development of mathematical science.



978-3-330-00034-6

INTRODUCTION TO TOPOLOGICAL  
DYNAMICAL SYSTEMS III

MOHAMMED NOKHAS MURAD KAKI

Mathematics Department  
College of Science  
University of Grant-Chester  
2014

# INTRODUCTION TO TOPOLOGICAL DYNAMICAL SYSTEMS IV

## **Topological Dynamics**

### Abstract

Based on his Ph.D. Dissertation, the author has completed the fourth book entitled Introduction to Topological Dynamical Systems IV. To continue the research and deepen the theories mentioned in these books, the author is now working on another book entitled Introduction to topological Dynamical Systems V

Mohammed Nokhas Murad Kaki  
[muradkakee@yahoo.com](mailto:muradkakee@yahoo.com)

**INTRODUCTION TO TOPOLOGICAL DYNAMICAL  
SYSTEMS V**

**MOHAMMED NOKHAS MURAD KAKI**

**A thesis submitted in the requirement for the award of the degree of Doctor of  
Philosophy (Mathematics)**

**Mathematics Department  
College of Science  
University of Grant-Chester**

**2014**

# Weak Structure Dynamical Systems I

[Topological Dynamics]

---

Dr. Mohammed Nokhas Murad Kaki

In this book, new types of topological transitivity, minimality, exactness, and chaoticity in both topological and weak structure spaces are introduced and studied. On one hand, it introduces postgraduate students to the study of new types of topological transitivity, minimal systems and chaotic maps and gives an overview of results on the topic, but on the other hand, it covers some of the recent developments of new ideas concerning science, technology, electronic and computer science.

# New Insights into Physical Sciences I

[Topological Dynamics]

---

Dr. Mohammed Nokhas Murad Kaki

In this book, new types of topological transitivity, minimality, exactness, and chaoticity in both topological and weak structure spaces are introduced and studied. On one hand, it introduces postgraduate students to the study of new types of topological transitivity, minimal systems and chaotic maps and gives an overview of results on the topic, but on the other hand, it covers some of the recent developments of new ideas concerning science, physics, technology, electronic and computer science.



2020

Physical Sciences

## New Insights into Physical Sciences II

In this book, new types of transitivity, stability of points and sets in theoretical physics are introduced and studied. This is intended as a survey article on topological transitivity of a discrete systems.

Dr. Mohammed Nokhas Murad Kaki