

NICOLAS LAOS

My major publications in pure and applied mathematics and philosophy of science are the following:

A. In English, the book entitled *Topics in Mathematical Analysis and Differential Geometry*, published by the World Scientific Publishing Company (Singapore, New Jersey, London, Hong Kong, 1998).

World Scientific Publishing Company:

https://www.worldscientific.com/page/contactus?srsltid=AfmBOoq7Op8h_QTOjSEINDUvnKsM4ANSFcYCvBYLprJvf7l3gzSUnBf

B. In Greek, the book entitled *Εισαγωγή στα Καθαρά και στα Εφαρμοσμένα Μαθηματικά και στην Επιστημολογία* (Introduction to Pure and Applied Mathematics and Epistemology), published by Εκδόσεις Νέων Τεχνολογιών/NewTech Pub (Αθήνα, 2025).

Το βιβλίο μου *Εισαγωγή στα Καθαρά και στα Εφαρμοσμένα Μαθηματικά και στην Επιστημολογία* (Αθήνα: Εκδόσεις Νέων Τεχνολογιών/NewTech Pub, 2025) αποτελεί ένα αυτοτελές διδακτικό εγχειρίδιο που καλύπτει με έναν πρωτότυπο, διανυγή, και συνθετικό τρόπο τα βασικά θέματα στους εξής τομείς:

- απειροστικός λογισμός (λογισμός μίας μεταβλητής, λογισμός πολλών μεταβλητών, και διανυσματικός λογισμός), πραγματική και μιγαδική ανάλυση, άλγεβρα, γραμμική άλγεβρα, αξιωματική θεωρία αριθμών, στατιστική και θεωρία πιθανοτήτων, γεωμετρία (περιλαμβανομένης της κλασσικής ευκλείδειας γεωμετρίας, της αναλυτικής γεωμετρίας, της μη-ευκλείδειας γεωμετρίας, και της μετρικής γεωμετρίας), τοπολογία, διαφορικές εξισώσεις, καθώς και μαθηματική λογική και μαθηματική φιλοσοφία, κυρίως σύμφωνα με τη διδακτέα ύλη του πρώτου έτους και του δευτέρου έτους των μαθηματικών σχολών, των σχολών φυσικών επιστημών, και των πολυτεχνικών σχολών στο πλαίσιο των

προγραμμάτων σπουδών ελληνικών, βρετανικών, και βορειοαμερικανικών ιδρυμάτων ανώτατης εκπαίδευσης·

- μαθηματική φυσική·
- ποσοτικές μέθοδοι που διδάσκονται στα προπτυχιακά και στα μεταπτυχιακά προγράμματα των σχολών οικονομικών και πολιτικής οικονομίας·
- μαθηματική μοντελοποίηση στις φυσικές και στις κοινωνικές επιστήμες·
- φιλοσοφία της επιστήμης και βασικές αρχές ιστορίας της φιλοσοφίας σε συνδυασμό με την ιστορία της επιστήμης.

Καθώς αυτό το βιβλίο είναι γραμμένο με τρόπο που αντανakλά την εμπειρία του συγγραφέα στα διεπιστημονικά μαθηματικά (interdisciplinary mathematics), παρουσιάζει και εξηγεί πλήρως και συστηματικώς πολλές εφαρμογές των μαθηματικών στη φυσική, στη μηχανολογία, στην ηλεκτρολογία, στη βιολογία, στη νευροεπιστήμη, στη μαθηματική ψυχολογία, στα οικονομικά, και στις στρατηγικές σπουδές.

Εκδόσεις Νέων Τεχνολογιών/NewTech Pub:

<https://newtech-pub.com/%ce%b5%cf%80%ce%b9%ce%ba%ce%bf%ce%b9%ce%bd%cf%89%ce%bd%ce%af%ce%b1/>

ACKNOWLEDGMENTS

Regarding my competence in mathematics, I would like to acknowledge the importance of the mathematical education and scientific guidance that I received from the following professors during my studies at the University of La Verne: the renowned research mathematician Professor Themistocles M. Rassias (Ph.D./University of California, Berkeley, former Chairman of the Department of Mathematics at the University of La Verne's Athens Campus and Professor at the National Technical University of Athens) taught me Calculus I, II & III, Advanced Calculus, Linear Algebra, Differential Equations, and Number Theory, and he supervised my research work in the foundations of mathematical analysis and differential geometry (a part of the research work and the dissertation that I completed at the University of La Verne under the supervision of Professor Themistocles M. Rassias was published in 1998 as the volume no. 24 of the scientifically advanced Series in Pure Mathematics of the World Scientific Publishing Company); the highly experienced applied mathematician Professor Christos Koutsogeorgis (Ph.D./City University of New York) taught me Discrete Mathematics, Abstract Algebra, and Probability Theory with mathematical statistics; and the distinguished IT Professor Chamberlain Foes (Ph.D./Portland State University) taught me PASCAL (programming language) and introduced me to mathematical informatics and management information systems.

Moreover, my cooperation with the prominent philosopher Dr. Giuliano Di Bernardo, who held the Chair of Philosophy of Science and Logic at the Faculty of Sociology of the University of Trento from 1979 until 2010, has helped me to explore several aspects of epistemology. Epistemology is the branch of philosophy that makes knowledge itself the subject matter of inquiry, and, therefore, every conscientious scholar has to be epistemologically sensitive and informed. Furthermore, epistemology is intimately related to ontology, also known as metaphysics, which investigates the nature of existence itself as well as the degree of existence of the phenomena that appear to us (and epistemology enables us to

distinguish between theorems about models and theorems about reality; this distinction is very important in applied science, where models must be not only logically valid but also empirically validated).

Regarding my interdisciplinary studies and research work, I would like to acknowledge the contribution of the following professors to my education during my studies at the University of La Verne (1992–96): the historian Professor Vassilios Christides (Ph.D./Princeton University) taught me a comprehensive set of courses on the history of world civilization; the historian Professor Paul Angelides (Ph.D./Ohio State University) taught me the courses “U.S. Intellectual History” and “Development of American Democracy”; the political scientist Professor Blanca Ananiadis (Ph.D./University of Essex) taught me European politics and political institutions; and the sociologist Professor Gerasimos Makris (Ph.D./LSE) taught me Sociology. My studies in the history of civilization in general and in the history of science in particular have enabled me to articulate a typology of cultures, and, in this context, I have to mention that my approach to cultural issues, including science, is founded on certain aspects of classical philosophy and of what we call “modernity.”

My gratitude extends to the following scholars: the political scientist Dr. Hazel Smith (Professor of International Security at Cranfield University, UK, and Fellow of the Royal Society of Arts, London) and the economist and epistemologist Dr. Michael Nicholson (Professor of International Relations at the University of Sussex), who supervised my research work in the epistemology and the mathematical modeling of International Relations and Political Economy during 1997–99 at the University of Kent’s London Centre of International Relations; as well as my colleagues at the Faculty of Philosophy of the Theological Academy of Saint Andrew (Academia Teológica de San Andrés), Veracruz, Mexico, where I completed a series of Ph.D. courses (specifically, Methodology of Philosophical Investigation I & II, Theology and Philosophy I–IV, Selected Topics in Christian Philosophy I–IV, Seminar on Investigation in Christian Philosophy I–IV, and Interpretation of Philosophical Texts I & II), and the Dean of that Theological Academy, Metropolitan Dr. Daniel de Jesús Ruiz

Flores of Mexico and All Latin America of the Ukrainian Orthodox Church (Iglesia Ortodoxa Ucraniana en México) helped me to explore and appreciate the interdisciplinary nature of the scholarly disciplines of theology and philosophy, and he signed my Doctoral Degree in Christian Philosophy.



Nicolas Laos's Photographs with Other Scientists and Philosophers



With my mathematics mentor Professor Themistocles M. Rassias (former Chairman of the Department of Mathematics at the University of La Verne's Athens Campus and Professor at the National Technical University of Athens). Professor Th. M. Rassias has received several awards, and he is an active member of an array of journals in mathematical analysis and optimization. His work extends over several fields of mathematical analysis, and he has published numerous research papers and research books on nonlinear functional analysis, functional equations, approximation theory, analysis on manifolds, calculus of variations, inequalities, and metric geometry. Professor Th. M. Rassias's research work is known in the field of mathematical analysis with the terms "Hyers–Ulam–Rassias stability (of functional equations)" and "Cauchy–Rassias stability," and in geometry with the term "Aleksandrov–Rassias problem (for isometric mappings)." Moreover, Professor Th. M. Rassias has conducted pioneering research in the Morse theory of critical points and in the study of Plateau's problem (i.e., the problem of determining the surfaces of minimum area spanned in a given curve or subject to other boundary conditions), modifying Marston Morse's critical point theory in order to solve Plateau's problem.



With Professor Svetoslav Jordanov Bilchev (former Chairman of the Department of Algebra and Geometry at the “Angel Kanchev” University of Ruse), at whose invitation, I addressed the Fifth International Conference on Differential Equations and Applications held in Ruse, Bulgaria, 24–29 August 1995. Professor S. J. Bilchev (1946–2010) received several awards, and his research interests included geometry/differential geometry, differential equations, inequalities, game theory, and mathematical models in economics. I cooperated with Professor S. J. Bilchev in the fields of differential equations and topology, and some results of our joint work have been published by the Union of Bulgarian Mathematicians and have been presented at mathematical conferences in Ruse and Kazanlak.



With Professor Stepan Tersian (faculty member of the Department of Mathematics at the “Angel Kanchev” University of Ruse and member of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences). Professor S. Tersian and Professor S. J. Bilchev were the editors of the *Proceedings of the Fifth International Conference on Differential Equations and Applications* held in Ruse, Bulgaria, 24–29 August 1995, published by the “Angel Kanchev” University of Ruse and the Union of Bulgarian Mathematicians. The aforementioned volume of proceedings includes my research paper “A Comparative Study of Linear and Nonlinear Differential Equations with Applications.”



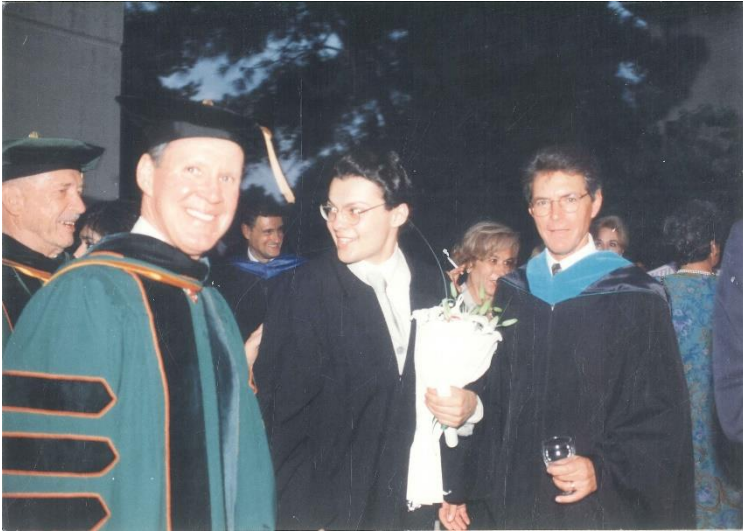
With Professor Stojan Chernev (faculty member of the Center of Applied Mathematics and Informatics at the “Angel Kanchev” University of Ruse). At the University of Ruse, I had the opportunity to investigate various problems by means of dynamical systems.



With the Latvian mathematician Professor Andrejs Reinfelds, Differential Equations and Numerical Methods Chair, University of Latvia (Latvijas Universitāte).



From right to left, with: Professor Ruslan Mitkov (Research Professor at the Institute of Mathematics of the Bulgarian Academy of Sciences), Professor Myron Grammatikopoulos (Professor of Mathematics at the University of Ioannina, Greece, and Visiting Professor of Mathematics at the “Angel Kanchev” University of Ruse, Bulgaria), Professor Emiliya Velikova (Professor of Mathematics at the “Angel Kanchev” University of Ruse), and Ms R. Gatzova (Secretary, Center of Applied Mathematics and Informatics at the “Angel Kanchev” University of Ruse).



With the President of the University of La Verne, California, Dr. Stephen C. Morgan (first on the left) and other senior board members of the University of La Verne, 1996. During my studies at the University of La Verne, while majoring in Mathematics, I also conducted interdisciplinary studies, which underpinned my subsequent further studies and work in the fields of interdisciplinary mathematics and epistemology. During my studies at the University of La Verne, while majoring in Mathematics, I also conducted interdisciplinary studies, which underpinned my subsequent further studies and work in the fields of interdisciplinary mathematics and epistemology.





With my philosophy mentor Professor Giuliano Di Bernardo, who held the Chair of Philosophy of Science and Logic at the Faculty of Sociology of the Università degli Studi di Trento from 1979 until 2010, and he is a member of the Académie Internationale de Philosophie des Sciences. Apart from the field of academic philosophy, my cooperation with Professor Giuliano Di Bernardo includes work in the context of the Dignity Order, an international private exclusive membership association of which Professor Giuliano Di Bernardo is the Founder and Grand Master, with the goal of promoting the dignity of humanity. Prof. Di Bernardo personally inducted me into the Dignity Order and bestowed upon me the titles of a Knight and a Grand Prior of the Dignity Order.



Sardinia, Italy, 2023; a convocation of the Knights and the Dames of Dignity in Orsei: Based on, and in line with, the teachings and honors that I have received from Professor Giuliano Di Bernardo in the context of the Dignity Order (on the left), and using Freemasonry as an instrument and a symbolic technology for accomplishing my projects (totally detached from the profound degeneration that mainstream contemporary Freemasonries have suffered), I manage a unique and exclusive, autonomous Masonic association of literati (on the right) in order to operate as a guild of rigorously educated men and women who share and serve concrete epistemological, moral, aesthetic, and ideological values, principles, and visions, reflected in this book, and in order to preserve and promote the concept and the value of the *Homo universalis* combined with an aristocratic and heroic tradition. My initiative to create a new, genuinely philosophically informed, intellectually significant, and historically relevant Freemasonry *from literati for literati* is based on my argument that contemplation must be rigorous and combined with action and on my attempt to articulate a creative synthesis between various aspects of Plato's political theory, modern philosophy, and cybernetics. Discarding degraded and dilapidated Masonic institutions as well as mysticism and pseudoscience, and simultaneously refusing to endorse the cult of scientism, and abstaining from commercial and substantitively anti-scientific aspects and practices of the contemporary "academia," I used Freemasonry as a means and a symbolic technology in order to create a

“scientific underworld,” that is, an independent and international fraternal network of scientific and philosophical minds committed and, indded, dedicated to scientific and philosophical knowledge and treating thinking as pleasure. Thus, I am proud to be known to various interested parties as the founder of “scientific Freemasonry,” to which I have given the code name the “Modern and Perfecting Rite of Symbolic Masonry,” which I have personally composed and instituted.





With Dr. Spyros Kiartzis, electrical engineer and business economist, Director of Alternative Energy Sources and New Technologies for the Hellenic Petroleum Group (HELLENiQ ENERGY Holdings S.A.), at an event that I organized in December 2023 in order to present some results of my scholarly endeavors.



Presenting some results of my research work regarding epistemology and mathematical modeling in the social sciences in the Ceremonial Hall of the Rectorate of the National and Kapodistrian University of Athens (“Ioannis Drakopoulos” amphitheater), in May 2022; with Dr. Stavros Mavroudeas (Ph.D./Birkbeck College, University of London), Professor of Political Economy at the Department of Social Policy of Panteion University in Athens, Greece (on my right). Professor Stavros Mavroudeas’s areas of expertise include Marxist political economy, macroeconomics, and growth theory.



I present part of my research work and social action at a press conference in Thessaloniki, Greece, 2023:

<https://www.thessnews.gr/thessaloniki/mathimata-tektonikis-filosofias-o-nikolaos-laos-ypografei-ena-endiaferon-vivlio/>



Presenting my work in the scholarly discipline of epistemology based on Giuliano Di Bernardo's thought and publications, in the Ceremonial Hall of the Greek Society of Writers, in Athens, in 2023; with Dr. Ioannis Katselidis, Lecturer of History of Economic Theory at the National and Kapodistrian University of Athens and at the Athens University of Economics and Business (on my right). The major focus of my philosophy is structuralism. Structuralism does not imply that a structural argument (e.g., a theorem) should dictate anything to reality, but it implies that, due to a valid structural argument, we have to expect that the empirical morphology will take a particular form, and, whenever reality does not comply with a structural argument, it simply makes the situation more thought-provoking and intellectually challenging.



In the Ceremonial Hall of the Greek Society of Writers, in Athens, in 2023, having on my left the lawyer and criminologist Mrs. Christina Ch. Florou (member of the Athens Bar Association), the biologist Dr. Vasileios Balis (Academic Director of the Aegean College's Thessaloniki Campus and associate of the Center for Regenerative Medicine of the Aristotle University of Thessaloniki), and the business consultant Dr. Stamatis Tournis (Managing Partner and Principal Consultant of the Sigma Business Network, expert in operations research and risk management).



Between the distinguished Greek political journalist and analyst Mr. Spyros Sourmelidis (on the left) and the Greek publisher and philologist Mr. Agisilaos Kalamaras (on the right), Athens 2023, presenting my book entitled *Μαθήματα Τεκτονικής Φιλοσοφίας* (Εκδόσεις Ίαμβος, https://www.iambos.gr/index.php?route=product/product&product_id=36259). In that event, I explained that my methodology and my mindset, in general, are inspired by cybernetics, which cultivates an inter-disciplinary approach to knowledge. As the renowned British polymath, cybernetics expert, management consultant, and university professor Stafford Beer (1926–2002) has aptly pointed out, all worthwhile thinking is underpinned by syntheses of different fields of study. Cybernetics is an integral part of my thought and of my arguments in favor of modernity. Whereas informatics is a branch of engineering and applied mathematics that deals with the study of computing and computational systems, cybernetics is a strongly interdisciplinary field that deals with the study of systems and control, communication, as well as information processing in living organisms and machines. Thus, cybernetics is focused on the application of principles from mathematics, engineering, biology, neuroscience, and social sciences in order to understand structures and explain the behavior of complex systems and in order to develop models for the control and regulation of the systems under study, whereas computer science is focused on the design, the development, and the use of software and hardware systems, including their underlying principles, technologies, and methodologies.



With the distinguished electrical engineer and IT and Business Consultant Dr. George Vardangalos (Ph.D./National Technical University of Athens), in Athens, in 2024, enjoying the Italian cuisine.



September 2024, with Dr. Antonio Procopio, Professor at the Medical School of the Università Politecnica delle Marche (second on the left), Dr. Stefano Martinotti, Direttore UOC di Patologia Clinica e Microbiologia Miulli General Hospital (Bari) and Professor at the Medical School of LUM University (third on the left, sitting on my right), and Dr. Guido Condorelli, Pharmacologist and Clinical Toxicologist at the Università di Catania (third on the right, sitting on my left), among other friends and scholarly interlocutors.