MATHEMATICS STUDIES

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Abstract

Studies in Mathematics.

\[ e^{i\pi} + 1 = 0 \]

Euler’s identity (1748)

“Thought is only a flash between two long nights, but this flash is everything.”

J. H. Poincaré

A drop of water in the ocean, a grain of sand in the desert, an atom in the universe, a cell in the human body, a day in the eternity.

MATHEMATICS STUDIES

MATHEMATICAL ANALYSIS (MAT/05)

Mathematical Methods

Volume 1: Real Analysis
Volume 2: Complex Analysis
Volume 3: Several Complex Variables
Volume 4: Functional Analysis I
Volume 5: Functional Analysis II
Volume 6: Theory of Functions I
Volume 7: Theory of Functions II
Volume 8: Calculus of Variations
Volume 9: Harmonic Analysis
Volume 10: Partial Differential Equations I
Volume 11: Partial Differential Equations II
Volume 12: Game Theory

PROBABILITY AND STATISTICS (MAT/06)

Stochastic Processes

Volume 13: Mathematical Probability
Volume 14: Stochastic Analysis
Volume 15: Stochastic Differential Equations
Volume 16: Mathematical Finance and Mathematics for Economics
Volume 17: Mathematical Statistics
Volume 18: Mathematical Methods for Finance

NUMBER THEORY

Number Theory I, Number Theory II

Volume 19: Algebraic Number Theory
Volume 20: Analytic Number Theory

ALGEBRA (MAT/02)

Volume 21: Group Theory
Volume 22: Ring and Module Theory
Volume 23: Commutative Algebra
Volume 24: Homological and Homotopical Algebra
Volume 25: Representation Theory
Volume 26: Theory of Categories
Volume 27: Classical and Differential Galois Theory
Volume 28: Algebraic K-theory

GEOMETRY (MAT/03)

Volume 29: Algebraic and Differential Topology
Volume 30: Algebraic Geometry I
Volume 31: Algebraic Geometry II
Volume 32: Complex Algebraic Geometry
Volume 33: Differential and Riemannian Geometry
Volume 34: Convex and Discrete Geometry
MATHEMATICAL LOGIC (MAT/01)

Foundations of Mathematics, Mathematical Logic I, Axiomatic Method and Set Theory

Volume 35: Mathematical Logic II  Volume 36: Non-standard Analysis

MATHEMATICAL PHYSICS (MAT/07)

Analytical Mechanics, Celestial Mechanics, Astronomy, Statistical Mechanics, Quantum Mechanics, Special and General Relativity

Volume 37: Ergodic Theory  Volume 39: Continuum Mechanics
Volume 38: Hamiltonian and Symplectic Mechanics  Volume 40: Dynamical Systems

Mathematics for Computer Science, Computer Programming

Volume 41: Graph Theory and Ramsey Theory  Volume 44: Discrete Optimization
Volume 42: Matrix Analysis and Random Matrix Theory  Volume 45: Cryptography
Volume 43: Combinatorics  Volume 46:

NUMERICAL ANALYSIS (MAT/08)

Volume 47: Introduction to Numerical Analysis  Volume 50: Approximation Theory
Volume 49: Complements of Numerical Analysis

OPERATIONAL RESEARCH (MAT/09)

Volume 52: Operational Research