

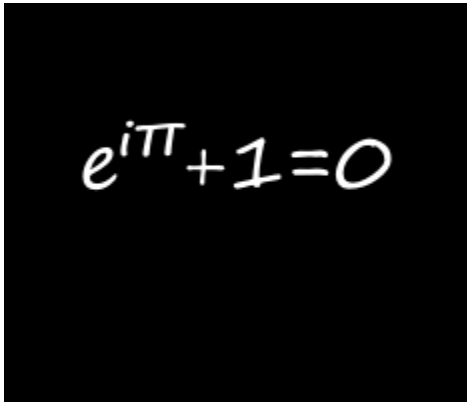
# MATHEMATICS STUDIES

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## Abstract

Studies in Mathematics.

A black square containing the mathematical equation  $e^{i\pi} + 1 = 0$  written in white, handwritten-style text.

Euler's identity (1748)

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

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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.

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## MATHEMATICS STUDIES

### MATHEMATICAL ANALYSIS (MAT/05)

Mathematical Methods

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

### PROBABILITY AND STATISTICS (MAT/06)

Stochastic Processes

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|--|---|
| <b>Volume 13</b> : Mathematical Probability          | <b>Volume 16</b> : Mathematical Finance and Mathematics for Economics |
| <b>Volume 14</b> : Stochastic Analysis               | <b>Volume 17</b> : Mathematical Statistics                            |
| <b>Volume 15</b> : Stochastic Differential Equations | <b>Volume 18</b> : Mathematical Methods for Finance                   |

### NUMBER THEORY

Number Theory I, Number Theory II

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|--|---|
| <b>Volume 19</b> : Algebraic Number Theory | <b>Volume 20</b> : Analytic Number Theory |
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### ALGEBRA (MAT/02)

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

### GEOMETRY (MAT/03)

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|--|---|
| <b>Volume 29</b> : Algebraic and Differential Topology | <b>Volume 32</b> : Complex Algebraic Geometry           |
| <b>Volume 30</b> : Algebraic Geometry I                | <b>Volume 33</b> : Differential and Riemannian Geometry |
| <b>Volume 31</b> : Algebraic Geometry II               | <b>Volume 34</b> : 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

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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** :

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### NUMERICAL ANALYSIS (MAT/08)

**Volume 47** : Introduction to Numerical Analysis

**Volume 50** : Approximation Theory

**Volume 48** : Numerical Analysis

**Volume 51** : Numerical Methods for Partial Differential Equations

**Volume 49** : Complements of Numerical Analysis

### OPERATIONAL RESEARCH (MAT/09)

**Volume 52** : Operational Research