FGV | SAO PAULO SCHOOL OF ECONOMICS

Syllabus

[cmcd.economia@fgv.br]

Course: Mathematics for Economists
Professor:

SUMMER, 2027

PROGRAM

Basic mathematical tools for economists.

BIBLIOGRAPHY

1. Rudin, W.: “Principles of Mathematical Analysis”. McGraw-Hill, 1976.
2. Lima, E. L.: “Análise Real Volume I: Funções de Uma Variável”, IMPA, 1989.
3. Lima, E. L.: “Curso de Análise Volume I”, IMPA, 1982.
4. Ok, E.: “Real Analysis with Economic Applications”. Princeton University Press, 2007.

GRADING

The final grade is based on three components:

- Exercises in TA sessions (45%)
- Exam (45%)
- Optimization Problem Set (10%)

The final grade in Mathematics for Economists will compose 20% of the final grade in Microeconomics I.

PROFESSOR - EMAIL

DETAILED PROGRAM

Part I: Fundamentals

1. Logic
2. Sets
3. Relations
4. Orders
5. Functions
6. Finite and Infinite Sets

Part II: Real Line

7. Sequences of Real Numbers
8. Limits and Continuity of Functions
9. Topology in the Real Line
10. Differentiation

Part III: Beyond the Real Line

11. Metric Spaces
12. Other Spaces

Part IV: Other Mathematical Tools

13. Concave and Quasi-Concave Functions
14. Convex Separation Theorems
15. Lagrange Multipliers and Karush-Kuhn-Tucker Theorem