



Course: Optimization
Faculty: Johannes Gierlinger
Term: Fall
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Office Hours: Flexible. Appointments by email.

Description: Self-contained course on graduate-level Mathematics for Economists.

Objectives: To master definitions, proofs, and the core analytical tools in Economics.

In particular:

- (1) Define and interpret the mathematical objects found in Economics;
- (2) Study their properties and the relationships between them;
- (3) Find efficient methods to solve problems, both abstract and concrete.

Outline: The above corresponds to the following three topics:

- (1) Metric spaces and topology;
- (2) Real analysis;
- (3) Optimization.

More details will follow at the beginning of the class.

References:

Carter, Michael. *Foundations of mathematical economics*. MIT Press, 2001.
OK, Efe A. *Real analysis with economic applications*. Princeton University Press, 2007.

Grading: 80% final exam, 10% quizzes, 10% problem sets.

