Cronograma/Weekly Planning
Optimización/Optimization
Enero/January 2026

magistral lecture 1 (week 2, 2-6 Feb):
Topic 1: Introduction to mathematical optimization
• Definition and classification of optimization problems.
• Geometric resolution of optimization problems of two variables.
• Ordered sets and monotone functions in the vectorial sense.

magistral lecture 2 (week 4, 16-20 Feb):
Topic 2: Optimization without constraints
• Optimization in open sets. First and second order necessary conditions. Second order sufficient conditions.
• Global extrema of concave/convex functions.

magistral lecture 3 (week 6, 2-6 March):
Topic 3: Optimization with equality constraints
• Local and global relative extremum.
• Lagrangian and Lagrange multipliers. First order necessary conditions.

magistral lecture 4 (week 8, 16-20 March):
Second order sufficient conditions.
• Optimization of concave/convex functions with equality constraints.
• Economic interpretation of the Lagrange multipliers.

reducido (week 9, 23-27 March): It includes the **Midterm**.

magistral lecture 5 (week 10, 6-10 April):
Topic 4: Optimization with inequality constraints
• Formulation of the problem. Kuhn-Tucker necessary conditions.

magistral lecture 6 (week 12, 20-24 April):
• Formulation of the problem. Kuhn-Tucker sufficient conditions.
• Comparative statics: value function and Envelope Theorem.
• Convex programming.
• Economic interpretation of the Kuhn-Tucker multipliers.

magistral lecture 7 (week 14, 4-8 May):
Reviewing and/or catching up on leftover material from previous weeks.