

## Cronograma, optimiz, enero 25

magistral 1, 3 febrero, semana 2:

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 2, 17 febrero, semana 4:

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 3, 3 marzo, semana 6:

Topic 3: Optimization with equality constraints

- Local and global relative extremum. Lagrangian and Lagrange multipliers. First order necessary conditions.

magistral 4, 17 marzo, semana 8:

Second order sufficient conditions.

- Optimization of concave/convex functions with equality constraints.
- Economic interpretation of the Lagrange multipliers.

reducido semana 9. Incluye prueba de clase.

magistral 5, 7 abril, semana 10:

Topic 4: Optimization with inequality constraints

- Formulation of the problem. Kuhn-Tucker necessary conditions.

magistral 6, 28 abril, semana 12:

- Formulation of the problem. Kuhn-Tucker sufficient conditions.
- Comparative statics: value function and Envelope Theorem.
- Convex programming.
- Economic interpretation of the Kuhn-Tucker multipliers.