Mathematical Programming

Course of the PhD Program in Mathematics

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- Professor: R. Rizzi (Univ. di Verona)

- Title: Mathematical Programming

- Outline: The course offers an introduction to Linear Programming (LP) and Combinatorial Optimization (CO) also exploring some of the links between the two. The approach adopted is algorithmic.

- Program:

    – Hands on introduction to Dynamic Programming (DP).

    – Introduction to Linear Programming (LP)

    1 what is an LP problem
    2 modeling your problem as a linear program
    3 the simplex method (description and analysis)
    4 duality theory
    5 complementary slackness
    6 economic interpretation
    7 sensitivity analisys
    8 geometric interpretation.

    – Introduction to graphs and Combinatorial Optimization (CO)

    1 graphs and digraphs as models
    2 a few good characterizations (bipartite graphs, eulerian graphs, Planar Graphs)
    3 shortest paths
    4 minimum spanning trees
    5 max flows and min cuts
    6 bipartite matching.

- Period: January 22 - February 1, 2018. More details at the home page for the course.

- WWW page of the course: at the `profs.sci.univr.it/~rrizzi/classes/` page choose your edition of the PhD Course in MATHEMATICAL PROGRAMMING.