Integer Programming and Lattices

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Timetable: 12 hrs (probably in October/November). Torre Archimede, Room 2BC/30.

Course requirements: basic Linear Algebra.

Examination and grading: to be discussed with students.

SSD: MAT/09 Operations Research.


Course contents: Lattice Theory is pervasive in Integer Programming. The following topics will be discussed:

- Fundamental concepts in Lattice Theory
- Minkowski’s convex body theorem
- Orthogonality defect and the LLL algorithm
- Shortest vector problem
- Löwner-John ellipsoids and lattice width
- Integer Programming in fixed dimension