Subject: **Operations Research**

Summary: The goal of this comprehensive examination is to evaluate the candidate's knowledge of the field of Operations Research. The expected level of knowledge is a senior undergraduate and junior graduate. The candidate must be familiar with the topics indicated by the keywords below, at a minimum.

Keywords

- Linear Programming (including methods of solution, sensitivity, and the dual).
- Networks (including methods of solution, max flow, and min cut, shortest route, spanning trees, PERT charts).
- Integer programming.
- Dynamic programming.
- Nonlinear programming (covering the more common methods, and the Karush-Kuhn-Tucker conditions).
- Convex sets and convex functions
- Linear matrix constraints and Schur complements
- Geometric programming
- Lagrange duality
- Pareto optimality and saddle points.