



Study Guide – Operations Research Preliminary Exam

Department of Industrial and
Manufacturing Engineering

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Topics

Below is a list of topics to be tested in the exam. There will be one question from either the Nonlinear Programming or Dynamic programming topics. Emphasis is on the modeling, interpretation and understanding of the theory rather than methodological details of particular solution algorithms. Accordingly, in this exam you won't be asked to perform tedious implementations of algorithms. However, you might be asked to perform on step iteration of such algorithms as simplex method.

- Linear Programming
- Integer Programming
- Network Optimization: Network flow and design problems
- Decision Analysis
- Queuing theory
- Nonlinear Programming
- Dynamic Programming

A good beginner's reference for the above topics is included in the below text (Chapters 1-12,15 and 17)

- Hillier, F. S. and Lieberman, G. J. Introduction to Operations Research, 8th ed., New York: McGraw-Hill, 2005

Exam Rules:

- Open book, no notes.