MATH-600  Optimization and simulation
Bierlaire Michel

Frequency
Every year

Remarque
Every year/ Next time: Spring 2020

Summary
Master state-of-the art methods in discrete optimization and simulation. Work involves: - reading the material beforehand - class hours to discuss the material and solve problems - homework

Content
Part 1: Simulation
Sheldon M. Ross (1997) Simulation
Draws (Chapters 4 & 5)
Discrete event simulation (Chapter 6)
Statistical data analysis, bootstrapping (Chapter 7)
Variance reduction techniques (Chapter 8)
Markov Chain Monte Carlo methods (Chapter 10)

Part 2: Optimization:
Classical optimization problems (chapter 25)
Greedy heuristics (section 27.1)
 Neighborhood ansd local search (section 27.2)
Diversification (sections 27.3 and 27.4)

Note
5 weeks on nonlinear optimization + 8 weeks on simulation

Keywords
optimization, simulation

Learning Prerequisites
Required courses

Supervision
Office hours: Yes
Assistants: Yes
Forum: Yes

Resources

Bibliography
Ross S. (2013) Simulation, Elsevier

Ressources en bibliothèque
- Optimization : principles and algorithms / Bierlaire M.
- Simulation / Ross S.

Websites
- http://transp-or.epfl.ch/

Moodle Link

Videos
- http://