

Opening

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Federal University of Santa Catarina

October 10th-14th, 2016

Introduction

Seminars

Presentations

Sumário

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Presentations

Course Goals

Develop fundamental knowledge on discrete optimization:

1. Problem formulation.
2. Problem classes and solution methods.
3. Integer programming.
4. Piecewise-linear approximation (unidimensional and multidimensional).

Sumário

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Seminars

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Seminars

October 10th (Monday)

- ▶ Fundamentals
- ▶ Introduction to modeling
- ▶ Modeling practice (AMPL)

- ▶ Review of linear programming
- ▶ Introduction to integer programming
- ▶ Practice (AMPL)

Seminars

October 11th (Tuesday)

- ▶ Relaxations and bounding
- ▶ Branch-and-bound algorithm
- ▶ B&B Practice

- ▶ Valid inequalities
- ▶ Cutting-plane algorithm
- ▶ Cutting-plane practice

Seminars

October 12th (Wednesday)

- ▶ Piecewise-linear approximation: onedimensional
- ▶ Branch-and-bound algorithm: multidimensional
- ▶ Practice

- ▶ Gas-lift allocation problem
- ▶ Introduction to MINLP
- ▶ Practice

Sumário

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Students Presentations

October 15th (Friday)

- ▶ Session 1
- ▶ Session 2
- ▶ Session 3