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O Programa de Pós-Graduação em Engenharia Elétrica da UFES oferece em regime intensivo a disciplina:

Técnicas Modernas de Otimização

Período: 07/07 a 13/08/2015, às terças e quintas
Horário: 9-12h
Carga horária: 45h (3 créditos)
Vagas: 30
Local: Laboratório LCEE, CT-2, UFES

Pré-requisitos:
Noções de Programação e de Otimização

Observação:
A disciplina será ministrada em Inglês

Matrículas:
Na Secretaria do PPGEE (CT-6, sala 201) ou pelo e-mail cursos.labtel@gmail.com

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Descrição da Disciplina

PART 1

Fundamentals of Optimization Modelling and Large Scale Optimization Solving by Column Generation

Prof: Sylvain Perron (GERAD and HEC Montréal, Canada)

This course emphasizes the modeling and implementation aspects of optimization problems. In the first part, we will present different modeling techniques in a very simple way illustrated by various examples. Basic notions of problem solving and implementation will also be presented. The second part of the course is devoted to the powerful column generation technique of linear programming which has already been used for solving large scale optimization problems in several domains. After having presented the main principles of column generation, we will then discuss important issues for its efficient implementation. We will conclude by the application of column generation in telecommunication.

PART 2

Heuristic optimization, design and analysis of graphs and networks

Prof.: Gilles Caporossi (GERAD and HEC Montréal, Canada)

The principles of the main modern metaheuristics will be presented in the first part of the course, simulated annealing (SA), tabu search (TS), genetic algorithms (GA) and variable neighborhood search (VNS). Emphasis will then be given on VNS, and its implementation. The second part of the course will be dedicated to the use of VNS for network design, with a tutorial on the use of the AutoGraphiX software, software for computer aided graph theory that is well suited for the design of reasonably small networks.
The third part of the course will be dedicated to the analysis and characterization of existing networks.