Code: MAT7006	***Optimization Methods***	
Period: S7	**ECTS:** 6	**Language:** English

Organisation: *Face to face: 42 hours* *Homework: 42 hours* *total load: 84 h*

Objectives:
Acquiring some notions of optimization in continuous, discrete or mixed spaces and their relationship with concrete applications.

Prerequisites:
Basic Calculus, Basic Algebra

Program: -

Content:
- Dynamic programming
- Branch and Bound methods
- B&B and the Travelling Salesman problem : the Little algorithm
- Linear Programming : the simplex algorithm
- Unconstrained non-linear Programming : gradient methods, Newton method, quasi-Newton methods
- Metaheuristics for hard optimization : Taboo Search, Evolutionary Computation, Simulated Annealing
- Applications to Pattern Recognition : elastic distance, Dynamic Time Warping, gradient methods in neural networks, etc.

Evaluation: Grading is as follows
Continuous exam
Written examination

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