

Algorithmes pour l'optimisation continue

ECTS : 3

Volume horaire : 15

Description du contenu de l'enseignement :

Course Content:

- Derivatives and Gradients
- Bracketing Techniques
- Local Descent Methods
- First-Order Optimization Methods
- Second-Order Optimization Methods
- Direct Optimization Methods
- Stochastic Optimization Techniques
- Introduction to Advanced Topics: Constrained Optimization, Multi-objective Optimization, and more.

Additionally, the course will provide a foundational introduction to Julia programming, integrated throughout the curriculum.

Compétence à acquérir :

The course provides a broad introduction to optimization with a focus on practical algorithms for the design of engineering systems. The course covers a wide variety of optimization topics, introducing the underlying mathematical problem formulations and the algorithms for solving them.

Mode de contrôle des connaissances :

- Brief Written Examination
- Project-Based Assignment

Bibliographie, lectures recommandées :

-Algorithms for Optimization. Mykel J. Kochenderfer and Tim A. Wheeler

<https://mitpress.mit.edu/9780262039420/algorithms-for-optimization/>

-Julia Documentation

<https://docs.julialang.org/en/v1/>