Algorithmic and advanced programming

ECTS : 5

Volume horaire : 36

Description du contenu de l'enseignement :

Explore advanced algorithmic design in the intensive course, Algorithms and Advanced Programming. Participants delve into cutting-edge concepts, optimization strategies, and intricate problem-solving methods, fostering a deep understanding of complex computational challenges. The program aims to equip individuals with the skills necessary to navigate the dynamic landscape of algorithmic innovation, making it a valuable experience for those seeking mastery in advanced computer science. Here is a possible list of contents, which might change according to the current trends or the lecturer's inclinations.

- Greedy Algorithms and Matroids
- Dynamic Programming
- Graph Algorithms I: Efficient Problem Solving
- Graph Algorithms II: Complex Problem Challenges
- Computational Geometry
- Stable Marriage
- Introduction to Integer Programming

Compétence à acquérir :

Develop proficiency in designing and implementing advanced algorithms

Mode de contrôle des connaissances :

- A programming project during the semester
- A final exam on paper

Bibliographie, lectures recommandées :

- Introduction to Algorithms, third edition, Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein. MIT Press.
- Combinatorial Optimization, William Cook, William Cunningham, William Pulleyblank, Alexander Schrijver. Wiley.

Document susceptible de mise à jour - 26/02/2026
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