Algorithmique et recherche opérationnelle

Lecturers
Bernard FORTZ (Coordinator) and Dimitrios PAPADIMITRIOU

Course mnemonic
INFO-F310

ECTS credits
5 credits

Language(s) of instruction
French

Course period
Second term

Course content

Introduction to mathematical modelling (linear programs). Algorithmic problems in graph theory.

Objectives (and/or specific learning outcomes)

After completing this teaching unit the student will be capable to conceptualize algorithmic methods and structures. He will manage the bacic concepts of mathematical modeling and solving optimisation problems (linear programming).

Pre-requisits and co-requisits

Co-requisites courses

INFO-F203 | Algorithmique 2 | 5 crédits

Teaching method and learning activities

Lectures and exercise sessions.

Contribution to the teaching profile

Be capable of formulating and solving complex or open-ended technical and scientific problems by using abstraction, modeling, simulation, and multi-disciplinary analysis while satisfying the requirements of university-level research and responding to requirements, constraints, the set context and the technical, socio-economical ethical and environmental stakes—all with the purpose of obtaining concrete solutions. Design, develop, realize, and exploit solutions (products, systems, services, software etc) in the domain of Computer Science. Innovate, by combining rigor and creativity, using a critical and demanding scientifical methodology (including state-of-the-art, problem statement, fixing hypothesis, modeling, validation, argumentation, and peer-review).

References, bibliography and recommended reading

Cormen, Leiserson, Rivest, and Stein, "Introduction to Algorithms", MIT Press.

Other information

Contact(s)

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Evaluation method(s)

written examination

Evaluation method(s) (additional information)

Written exam

Determination of the mark (including the weighting of partial marks)

40% theory + 40% exercices + 20% project

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the faculty of Sciences

BA-INFO | Bachelor in Computer science | unit 3