



Faculté des sciences appliquées

FSA

LINF1250 **Mathématiques pour l'informatique**

[30h+15h exercices] 5 credits

This course is taught in the 1st semester

Teacher(s): Etienne Loute (supplée Laurence Wolsey), Laurence Wolsey
Language: french
Level: 1st cycle course

Aims

- To introduce the student to the mathematics used in computer science

Main themes

The basic themes are:

- Elementary mathematical structures
- Proof techniques
- Enumeration
- Algebraic structures
- Graph theory
- Analysis of complexity

Content and teaching methods

The course is constructed around the following basic topics:

- Mathematical structures: finite and infinite sets, relations, functions
- Proof techniques: induction, elementary logic
- Enumeration: binomial coefficients, recurrences, generating functions
- Algebraic structures: monoids, groups, morphisms, lattice, Boolean algebras
- Graph theory: trees, paths, matchings, tours
- Analysis of algorithms, polynomial algorithms, etc.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Pre-requisites:

Mathematics I and II (or equivalent)

Evaluation: Test and Written exam

Material: course notes

Other credits in programs

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| ECGE12/IN | Deuxième candidature en sciences économiques et de gestion (5 credits) (Informatique) | Mandatory |
| LINF1EP | Année de formation préparatoire à la licence en informatique (5 credits) | Mandatory |
| SINF11BA | Première année d'études de bachelier en sciences informatiques (5 credits) | |