

- Faculté des sciences
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Operating Systems (3IN1031)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Bachelor en mathématiques	Cours: 2 ph Exercice: 2 ph	controle continu: 1	6
Bachelor en sciences et sport (mathématiques)	Cours: 2 ph Exercice: 2 ph	controle continu: 1	6
Master en informatique	Cours: 2 ph Exercice: 2 ph	controle continu: 1	6
Pilier principal B A - mathématiques	Cours: 2 ph Exercice: 2 ph	controle continu: 1	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante:

Lectures: Dr. Etienne Riviere.
Assistant(s): Alexey Monakhov

Objectifs:

The objective of this course is to introduce the core mechanisms of an operating system and to understand the design choices that led to their construction. Based on concrete examples and practical experience, the course will teach students how are processes, memory, disk, files and I/Os are managed in an operating system such as Mac OS, Linux or Windows. The focus will be on understanding the basic concepts and their rationales: only a small technical background will be assumed (see below for recommendations). This course is a sound basis for any CS-oriented curricula, but also very well suited for non-CS majors wishing to understand the basics of the mechanisms that turn computer systems from useless stack of plastic and metal into the useful and efficient tools we all enjoy using.

Contenu:

This course covers the fundamentals of operating systems and their underlying principles: process management and time sharing, memory management, disk management and input/output management. It will also contain bits of history and an introduction to the UNIX world. Exercises based on simulations or simplified computer systems environments will help mastering the concepts presented during the lectures. Depending on the time and the interest of students, some advanced topics such as virtualization or security may be introduced.

Forme de l'évaluation:

Regular assignments and final exam.

Documentation:

Operating System Concepts with Java
Abraham Silberschatz, Peter B. Galvin, Greg Gagne (Wiley)

Students are not required to buy the book. The computer science department has a number of them for consultation.

Pré-requis:

- no prior knowledge of operating systems concepts required
- no prior knowledge of UNIX required
- general knowledge of the Java programming language (although experience with another language will be adequate too)

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Forme de l'enseignement:

- lectures with exercices