

Academic year 2025/2026

Courses offered by the programme

Informatique (INFO) Computer Science

Semester(s) :

Curricula are organized in groups of courses (Unités d'Enseignement (UE)), consisting of several courses (Eléments Constitutifs (EC)). An EC is a teaching module including lectures (cours magistraux (CM)), tutorials (travaux dirigés (TD)), laboratory work (travaux pratiques (TP)), projects (PR), conferences (CONF), personal work (TA) and possibly other pedagogical activities (DIV). Some internships (stages (ST)) are compulsory

Commonly used abbreviations

**CM : Lectures
TD : Tutorials
TP : Laboratory Work
CONF : Conferences
TA : Personal Work
PR : Project
ST : Internship
DIV : Miscellaneous**

Operating System	INF07-SYST
Number of hours : 54.00 h	4.00 ECTS credit
CM : 18.00 h, TD : 16.00 h, TP : 20.00 h	
Reference Teacher(s) : BERTIER Marin	

Objectives :

- * How operating-system resource management mechanisms function. This makes operating system usable for conception and application programming.
- * The concept of parallelism is essential.
- * The concepts of process and threads, synchronization mechanisms and Input/Output are presented.
- * Practical work enables students to understand how to use process-management mechanisms for applications.

Content :

- * Introduction to operating systems.
- * Process life cycle. Representation/creation.
- * Process Synchronisation. Deadlocks.
- * Input/Output. Tubes and files.
- * Multithreading.
- * Synchronisation.
- * Object conception in a parallel framework.
- * Virtual machines.
- * SMP. Multicores. GPU. Hyperthreading.

Bibliography :

Griffiths : Architecture des systèmes d'exploitation - Hermès Krakowiak : Principes des systèmes d'exploitation des ordinateurs
 - Dunod Tanenbaum : Les systèmes d'exploitation - InterEditions Tanenbaum : Systèmes d'exploitation. Systèmes centralisés, systèmes distribués - InterEditions Camillerapp : Systèmes - Notes de cours, polycopié INSA

Requirements :

Module on Computer Architecture.

Organisation :

Revision of class notes. Preparation of exercises and oral examinations. Practical work tasks.

Evaluation :

- * A three-hour written examination (with documents) at the end of the semester.
- * Mark for practical work.

Target :