

## Testi in inglese

**Lingua insegnamento** Italian Language

**Obiettivi formativi** To learn the policies and the mechanisms of every level of an Operating System.

To learn the user interaction methodologies and the shell programming.

**Prerequisiti** computer architecture

**Metodi didattici** slides

**Modalità di verifica dell'apprendimento**

- written exams during the course

**Programma esteso**

- Notions of computer architectures, interrupt. Fundamental concepts. Operating Systems structures.
- Concurrency in Operating systems: interleaving, precedence graphs, linguistic tools, determinacy.
- Fundamental characteristics of the Java programming language and examples.
- Mutual exclusion. Peterson and Lamport algorithms.
- Distributed mutual exclusion.
- Deadlock in Operating Systems. Banker algorithm.
- Spin-lock and waiting Semaphores. Monitors. Classical synchronization problem
- The C language. Multithreaded programming with the C language.
- Introduction to the Posix programming in the Linux operating system.
- System Call for the Inter Process Communications. System Call for the filesystem. Timing measurement in Linux.
- The Linux Operating System. The Shell program.
- Introduction of the line commands of Linux. Bash shell programming.
- Basic structure of the Linux file system. Introduction to other Linux file systems.
- Identifiers. File protection.
- Processor management. Scheduling. Memory management
- Compilation of the Linux kernel. Linux Modules management. Linux device drivers and the embedded systems