



Programme of Module "Laboratorio di Sistemi Operativi"		
<ul style="list-style-type: none"> • Code: F11021 • Type of course unit: Compulsory (Bachelor Degree in Computer Science curriculum General) • Level of course unit: Undergraduate Degrees • Semester: 1 		
Number of ects credits: (Bachelor Degree in Computer Science) 6 (workload 150 hours)		
Teachers: Marco Autili (marco.autili@univaq.it)		
1	Course objectives	The objective of this course is to provide a complete introduction to Unix-like systems. Contents are organized as follow: PART I - UNIX System Architecture PART II - Command Line (Bash shell) PART III - Bash Scripting PART IV - Programming in UNIX-like Environment The course offers a basic, yet complete, knowledge of the following practical aspects: Unix-like systems architecture, command line interaction, shell scripting, files and directories, system calls, system-programming, process management, and concurrent programming.
2	Course content and learning outcomes (dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> • PART I - UNIX System Architecture • PART II - Command Line (Bash shell) • PART III - Bash Scripting • PART IV - Programming in UNIX-like Environment <p>On successful completion of this module, the student should :</p> <ul style="list-style-type: none"> • acquire the theoretical knowledge necessary to understand how operating systems can implement their main functionalities; • acquire the practical capabilities necessary to develop system programs and bash scripts in Unix-like environments; • will be able to develop concurrent programs using semaphores, mutex and condition variables for synchronization; • acquire methodologies to evaluate different operating systems bny integrating all the notions acquired during the course; • be able to communicate with competence and correctness of language the issues related with operating systems and systems programming; • be able to autonomously learn and study specific additional subjects related to operating systems.
3	Course prerequisites	Topics treated by the Operating Systems module, algorithms and data structures, computer architecture, design and programming of simple software solutions to elementary problems, programming in the C language. Ability to integrate classroom study room with personal study. Reading comprehension of English.
4	Teaching methods and language	<p>Lectures and exercises</p> <p>Language: Italian</p> <p>Reference textbooks</p> <ul style="list-style-type: none"> • W. Richard Stevens, Stephen A. Rago, <i>Advanced Programming in the UNIX Environment</i>. Addison-Wesley Professional Computing Series. (vol. 3rd Edition) 2013.
5	Assessment methods	For the 1st session, the exam consists of (1) a midterm written exam + a final written exam or (2) a total written exam. The exam is passed if the score of the total written exam or the final score as the average of the midterm written exam + the final written

		exam is greater or equal to 18. For later sessions, the exam consists of only a total written exam.
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