

SYLLABUS

COURSE DESCRIPTION

COURSE TITLE	Operating Systems
COURSE CODE	75009
SCIENTIFIC SECTOR	ING-INF/05
DEGREE	Bachelor in Computer Science and Engineering
SEMESTER	1st Semester
YEAR	2nd
CREDITS	8

TOTAL LECTURING HOURS	48
TOTAL LAB HOURS	24
PREREQUISITES	<ul style="list-style-type: none"> • Good knowledge of a programming language • Basic concepts of computing and hardware
COURSE PAGE	http://ole.unibz.it/

SPECIFIC EDUCATIONAL OBJECTIVES	<ul style="list-style-type: none"> • Type of course: "caratterizzanti" for L-31 and L-08 • Scientific area: "discipline informatiche" for L-31 and "ingegneria informatica" for L-8 <p>Establish a fundamental understanding of Operating Systems and their components/functionalities.</p>
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LECTURER	Fabio Persia, Lecturer's page: http://www.inf.unibz.it/~fpersia/
SCIENTIFIC SECTOR OF THE LECTURER	ING-INF/05
TEACHING LANGUAGE	English
OFFICE HOURS	Thursdays, 15:00 – 17:00 Office POS 2.11, Faculty of CS, POS Building, Piazza Domenicani 3 Fabio.Persia@unibz.it

TEACHING ASSISTANTS	Julien Corman
OFFICE HOURS	TBD
LIST OF TOPICS COVERED	<ul style="list-style-type: none"> • Programming in C • Resources • Scheduling and Concurrency • Processes and synchronization • File systems and memory management • Security and protection
TEACHING FORMAT	Frontal lectures and labs

LEARNING OUTCOMES	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> • understand the key principles, the structures and the organization of computer systems; • know the fundamental principles of programming. <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> • be able to develop scripting programs to interact with the operating system of modern computers. <p>Make judgments:</p> <ul style="list-style-type: none"> • be able to work autonomously according to the own level of knowledge; • be able to collect useful data and to judge operating systems and their applicability. <p>Communication skills:</p> <ul style="list-style-type: none"> • be able to use modern communication systems. <p>Ability to learn:</p> <ul style="list-style-type: none"> • have developed learning capabilities to pursue further studies with a high degree of autonomy; • be able to learn the innovative features of state-of-the-art operating systems; • be able to learn cutting edge IT technologies and their strengths and limitations.
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ASSESSMENT	<p>The assessment consists of a written exam, which also includes some exercises related to what was explained during the lab.</p> <p>The written exam evaluates the understanding of fundamental operating system concepts and checks whether the candidates have also acquired detailed knowledge about operating systems. This is done through open questions in the final exam (written) about both the theoretical content and the lab exercises. All parts are compulsory and must be positive to pass.</p>
ASSESSMENT LANGUAGE	English

EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	<p>Marks are distributed as follows:</p> <ul style="list-style-type: none"> written exam: theoretical questions (70%) and exercises related to what has been explained during the lab (30%). <p>Written exam questions will be evaluated in terms of correctness and clarity.</p>
REQUIRED READINGS	<p><i>Operating System Concepts</i> Abraham Silberschatz et al., 2012; Ninth Edition.</p> <p><i>C: How to Program, Seventh Edition</i> Paul Deitel, Harvey Deitel.</p>
SUPPLEMENTARY READINGS	<p>Suggestion for further reading:</p> <p><i>Modern operating systems.</i> Andrew S. Tanenbaum; 2008 <i>Operating systems: internals and design principles.</i> William Stallings; 2001</p>
SOFTWARE USED	<p>Dev-C++</p>