

SYLLABUS COURSE DESCRIPTION

COURSE TITLE	Computer Networks
COURSE CODE	76207
SCIENTIFIC SECTOR	ING-INF/05
DEGREE	Bachelor in Computer Science
SEMESTER	1st
YEAR	2nd
CREDITS	6
TOTAL LECTURING HOURS	40
TOTAL LAB HOURS	20
PREREQUISITES	Basic data structures and algorithms Basic Java programming skills
COURSE PAGE	https://ole.unibz.it
SPECIFIC EDUCATIONAL OBJECTIVES	<p>Type of course: "caratterizzante" Scientific area: „discipline informatiche“</p> <p>This course aims at providing a solid background in computer networks with special emphasis on the aspects of concurrency, coordination and agreement. Theory will be intertwined with discussions about how the notions introduced are exploited in practice, taking the Java framework as reference. This will allow to see in real contexts why distributed systems are important and how underlying issues can be addressed.</p>
LECTURER	Michele Segata
SCIENTIFIC SECTOR OF THE LECTURER	INF/01
TEACHING LANGUAGE	English
OFFICE HOURS	Monday, FUB POS 1.04, 2-4 PM (by appointment writing an email a couple of days in advance)
TEACHING ASSISTANT	Thomas Tschager

OFFICE HOURS	Thursday, FUB POS 1.04, 3-4 PM (by appointment writing an email a couple of days in advance)
LIST OF TOPICS COVERED	<ul style="list-style-type: none"> • Structure of computer networks and ISO OSI reference model • Network protocols: TCP/IP, Ethernet • Distributed system design • Sockets and RPCs • Distributed directory services • Failure robustness, security
TEACHING FORMAT	Frontal lectures Lab exercises
LEARNING OUTCOMES	<p>Knowledge and understanding</p> <ul style="list-style-type: none"> • know in detail the principles of computer networks and distributed systems; <p>Applying knowledge and understanding</p> <ul style="list-style-type: none"> • be able to plan and program in distributed programming environments; <p>Making judgments</p> <ul style="list-style-type: none"> • be able to collect useful data and to judge information systems and their applicability; <p>Communication skills</p> <ul style="list-style-type: none"> • be able to structure and write scientific documentation; <p>Ability to learn</p> <ul style="list-style-type: none"> • be able to learn cutting edge IT technologies and their strengths and limitations.
ASSESSMENT	<p>Written exam and lab reports.</p> <p>The aim of the written exam and the lab reports is to assess whether students 1) have understood basic computer network concepts, 2) can reason on and can solve computer networking problems, and 3) are capable of using the notions they learned during the course in a practical context.</p>
ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	<p>Marks are distributed as follows:</p> <ul style="list-style-type: none"> • 25% for the lab reports (attending the lab is not required but recommended and it is a way to improve the written exam grade); • 75% for the written exam. <p>The final grade will be a weighted average between the marks of the lab reports (25%) and the written exam (75%). The marks of lab reports are only considered if their grade is higher than the grade of the written exam. If not, the grade is the one of the written exam.</p>
REQUIRED READINGS	J. Kurose, K. Ross: "Computer Networking: A Top-Down Approach", 7th Edition, Pearson, 2017



SUPPLEMENTARY READINGS	Distributed Systems: Principles and Paradigms, A.S. Tanenbaum, M. van Steen, Prentice Hall, 2007 Andrew S. Tanenbaum, "Computer Networks", Prentice Hall
SOFTWARE USED	Wireshark, Java