

## SYLLABUS COURSE DESCRIPTION

<b>COURSE TITLE</b>	<b>Computer Networks</b>
<b>COURSE CODE</b>	76207
<b>SCIENTIFIC SECTOR</b>	ING-INF/05
<b>DEGREE</b>	Bachelor in Computer Science
<b>SEMESTER</b>	1st
<b>YEAR</b>	2nd
<b>CREDITS</b>	6
<b>TOTAL LECTURING HOURS</b>	40
<b>TOTAL LAB HOURS</b>	20
<b>PREREQUISITES</b>	Basic data structures and algorithms Basic Java programming skills
<b>COURSE PAGE</b>	<a href="https://ole.unibz.it">https://ole.unibz.it</a>
<b>SPECIFIC EDUCATIONAL OBJECTIVES</b>	Type of course: "caratterizzante" Scientific area: „discipline informatiche“  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.
<b>LECTURER</b>	Michele Segata
<b>SCIENTIFIC SECTOR OF THE LECTURER</b>	INF/01
<b>TEACHING LANGUAGE</b>	English
<b>OFFICE HOURS</b>	Monday, 14-:00-16:00 (by appointment writing an email a couple of days in advance), Room POS 1.04 Faculty of Computer Science, Piazza Domenicani 3
<b>TEACHING ASSISTANT</b>	Thomas Tschager

<b>OFFICE HOURS</b>	Thursday, 15:00-16:00 (by appointment writing an email a couple of days in advance), Room POS 1.04 Faculty of Computer Science, Piazza Domenicani 3
<b>LIST OF TOPICS COVERED</b>	<ul style="list-style-type: none"> <li>• Structure of computer networks and ISO OSI reference model</li> <li>• Network protocols: TCP/IP, Ethernet</li> <li>• Distributed system design</li> <li>• Sockets and RPCs</li> <li>• Distributed directory services</li> <li>• Failure robustness, security</li> </ul>
<b>TEACHING FORMAT</b>	Frontal lectures Lab exercises
<b>LEARNING OUTCOMES</b>	<p><b>Knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• know in detail the principles of computer networks and distributed systems;</li> </ul> <p><b>Applying knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• be able to plan and program in distributed programming environments;</li> </ul> <p><b>Making judgments</b></p> <ul style="list-style-type: none"> <li>• be able to collect useful data and to judge information systems and their applicability;</li> </ul> <p><b>Communication skills</b></p> <ul style="list-style-type: none"> <li>• be able to structure and write scientific documentation;</li> </ul> <p><b>Ability to learn</b></p> <ul style="list-style-type: none"> <li>• be able to learn cutting edge IT technologies and their strengths and limitations.</li> </ul>
<b>ASSESSMENT</b>	<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>
<b>ASSESSMENT LANGUAGE</b>	English
<b>EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS</b>	<p>Marks are distributed as follows:</p> <ul style="list-style-type: none"> <li>• 25% for the lab reports (attending the lab is not required but recommended and it is a way to improve the written exam grade);</li> <li>• 75% for the written exam.</li> </ul> <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>
<b>REQUIRED READINGS</b>	J. Kurose, K. Ross: "Computer Networking: A Top-Down Approach", 7th Edition, Pearson, 2017



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