

Course of study in  
**"Innovative, multimedia and digital communication" - [L20].**  
 a.y. 2021/2022

**SUBJECT**

**IT and digital communication technologies**

SDS: INF/01- ECT: 9

I YEAR; I SEMESTER

Lecturer: **Prof. Antonio Ronca**

Disciplinary Tutor: **Dr. Fabiana Bertazzi**

<p><b>Qualification and scientific background of the lecturer</b></p>	<p><b>Antonio Ronca</b>, IT specialist. He graduated in Information Technology at the University of Pisa. He began his professional career working with the “IT Research Centre for Cultural Heritage” of the “Scuola Normale di Pisa”, dealing with IT projects in the field of cultural heritage, including cataloguing software, tools for planning the restoration of the Tower of Pisa, and the Museum of the Province of Lucca. He created the first national information system for cataloguing Italian archival assets. Over the years, he has dealt with the use of information technology in many areas, from the aforementioned cultural heritage, to support tools for managers of investment funds, to tools to support urban mobility.</p> <p>He is currently First Technologist at INDIRE, where he also holds the position of Head of Digital Transition and Information Systems; he also provides support to the main projects of INDIRE, taking care of their infrastructural design.</p>
<p><b>Description of contents and subdivision of the programme into teaching modules</b></p>	<p>The course is organised in three teaching modules during which an overview of the main uses of information technology in the field of communication will be provided with particular attention to the methodologies for their design and the analysis of the results in terms of effectiveness through examples taken from everyday contexts.</p> <p>➤ <b>Module 1 - Introduction to computer systems</b></p>

	<p>The first module will cover an introduction to the main computer concepts starting from the von Newman model of computers to the description of the different types of clouds.</p> <p>The main topics covered will be:</p> <ul style="list-style-type: none"> <li>▪ von Newman architecture and main components of a computer</li> <li>▪ Computer networks (connection modes, characteristics, performance).</li> <li>▪ Internet (infrastructure, main services: email, web,...).</li> <li>▪ Cloud services: main models (IaaS, PaaS, SaaS,...).</li> </ul> <p>➤ <b>Module 2 - The design of an information system</b></p> <p>In the second module, the main methodologies used in the implementation of an information system will be addressed, focusing in particular on the steps of design and analysis of results.</p> <p>The main topics covered will be:</p> <ul style="list-style-type: none"> <li>▪ Elements of a web site.</li> <li>▪ Static and dynamic websites.</li> <li>▪ Scripting languages.</li> <li>▪ Site design: AGILE approach.</li> </ul> <p>➤ <b>Module 3 - The social model</b></p> <p>In the third module, the main sharing tools of social media will be addressed, analysing their salient features, and their ability to segment users according to their interests, social networks, etc.</p> <p>The main topics covered will be:</p> <ul style="list-style-type: none"> <li>▪ Web 2.0 and user-generated contents.</li> <li>▪ Types of social media.</li> <li>▪ Tracking and privacy.</li> </ul>
<p><b>Abstract</b></p>	<p>The aim of this course is to provide an overview of the main uses of information technologies for communication activities.</p> <p>In particular, after a presentation of the basic tools and their main features, the course will show how to create an information system, focusing on its design and evaluation skills.</p> <p>Finally, the social media issue will be analysed, examining the main advantages and disadvantages, how these tools allow the identification of interest groups and the creation of targeted communication campaigns.</p>

<p><b>Learning objectives</b></p>	<p>The aim of the course is to provide an overview of the main IT tools and their possible uses for professional use. Starting from the theoretical framework, the different technologies currently available will be presented, analysing their main benefits and limitations, in order to provide the necessary skills for a conscious and rational selection.</p>
<p><b>Expected learning outcomes</b></p>	<p><b>A. Knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>a. Understanding of the main components of a computer system.</li> <li>b. Understanding of technologies for the interconnection and distribution of data between information systems.</li> <li>c. Understanding of the main Internet services.</li> <li>d. Understanding of the main paradigms of Cloud services.</li> </ul> <p><b>B. Applied knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>a. Ability to read technical documentations on computer platforms.</li> <li>b. Ability to identify critical components.</li> </ul> <p><b>C. Autonomy of judgement</b></p> <ul style="list-style-type: none"> <li>a. Evaluation of application proposals by independently identifying typical characteristics of different architectures, with the possibility of understanding their suitability for the desired result.</li> </ul> <p><b>D. Communication skills</b></p> <ul style="list-style-type: none"> <li>a. Knowledge of language, including the various acronyms widely used in the ICT field</li> <li>b. Ability to represent one's own needs in the ICT field to technical interlocutors and interact throughout the entire software's life cycle.</li> </ul> <p><b>E. Learning ability</b></p> <ul style="list-style-type: none"> <li>a. Ability to read specific technical documentations.</li> <li>b. Ability to search for further documentations, particularly online.</li> </ul>
<p><b>Skills to be acquired</b></p>	<p><b>EXPECTED RESULTS</b></p>

	<p><b>A.</b> Use of textbooks concerning the ICT world and its use, including Cloud and social media solutions.</p> <p><b>B.</b> Professional approach to technological tools as a resource to be used in an active way and possession of adequate skills to identify the most suitable tools for solving specific problems. Ability to analyse and critically read the characteristics of ICT systems.</p> <p><b>C.</b> Ability to interact profitably with IT staff throughout the entire development cycle of ICT solutions, from the conception of a project to its deployment and evolutionary management.</p> <p><b>D.</b> Ability to undertake further studies with a high degree of autonomy.</p>
<p><b>Didactics organisation</b></p>	<p><b>DIDACTICS PROVISION</b></p> <ul style="list-style-type: none"> <li>➤ 6 hours of recorded video lessons available on the platform.</li> <li>➤ 3 synchronous meetings on the platform.</li> <li>➤ Podcasts of all the above-mentioned video lessons.</li> </ul> <p><b>INTERACTIVE TEACHING</b></p> <ul style="list-style-type: none"> <li>➤ 1 course orientation forum.</li> <li>➤ 3 in-depth thematic forums (1 per module).</li> <li>➤ Possibility to carry out work in groups.</li> <li>➤ 3 structured <i>e-activities</i> (as described in the section "<i>in itinere assessment methods</i>").</li> </ul> <p><b>SELF-LEARNING</b></p> <p>Teaching materials are provided for each module: in-depth thematic studies, articles and slides by the lecturer, open access readings, online resources, reference bibliography, etc.</p>
<p><b>Recommended examination texts</b></p>	<p><b>Recommended texts</b></p> <ul style="list-style-type: none"> <li>➤ Antonella Ferrari, Emanuela Zanleone - <i>CLOUD COMPUTING Aspettative, problemi, progetti e risultati di aziende passate al modello "as a service"</i> - Franco Angeli Ed.</li> <li>➤ Joel Sklar, <i>Principi di web design</i>, Apogeo education</li> <li>➤ Giuseppe Riva, <i>I social networks</i>, Il Mulino</li> </ul>

	Given the fast-changing nature of this context, slides of lectures carried out, reference texts and an extensive reference bibliography will also be provided.
<b>In itinere assessment methods</b>	<p>Access to the final examination is subject to the completion of <b>3 e-activities</b>, one for each module, which will provide an opportunity to deepen the contents presented:</p> <ol style="list-style-type: none"> <li><b>1.</b> an open-ended questionnaire covering the main computer architectures;</li> <li><b>2.</b> a critical analysis of an institutional website of a body/company in the light of what has been learnt, an activity to be carried out in cooperation in small groups;</li> <li><b>3.</b> a work of critical analysis of the communication campaign of an institution/company on social networks in the light of what has been learnt, activity to be carried out in cooperation in small groups.</li> </ol>
<b>Procedure for the final examination</b>	The assessment of learning will take the form of an oral interview on the course contents and on the final report submitted, if any. The grade (min 18, max 30 with possible honours) is determined by the level of performance for each of the following dimensions of the oral interview: mastery of contents, appropriateness of definitions and theoretical references, clarity of argument, command of specialist language.
<b>Language of instruction</b>	Italian