Date	Description	Grade	Credits
01/02/2021	**Large-Scale and Multi-Structured Databases**	27/30	9
At the end of the course the student will have acquired knowledge about the tools and methodologies for the design of non-relational databases. In particular, the student will be able to manage the archiving, updating and recovery of complex and multi-structured data, even of very large dimensions. The student will also acquire knowledge about the architectures, performances, and costs of modern infrastructures for the management of complex data, both from the point of view of the quantity of information and from the point of view of their structure.			
08/07/2021	**Foundations of Cybersecurity**	30/30	9
At the end of the course, the student will be able to design and implement secure distributed protocols and applications using a cryptographic library. He will be able to present the results of the project and development activities carried out in a written report and will be able to conceive and carry out simple crypto-analysis attacks.			
11/01/2022	**Software Systems Engineering**	30/30	6
The student who completes the course successfully will be able to demonstrate a solid knowledge of advanced techniques for designing software systems. Finally, he/she will be able to perform, working in group, a software project and produce all necessary documentation.			
14/02/2022	**Computer Architecture**	24/30	9
The student who successfully completes the course is able to choose the appropriate processing system for a specific application, take into account the architecture's characteristics in the development of efficient software, use benchmarks to make predictions about the final performance of an application, and be capable of optimizing inefficient applications already developed.			
23/02/2022	**Distributed Systems and Middleware Technologies**	30/30	6
The course is aimed at providing students with proper conceptual and technological tools for the design, analysis, and development of modern distributed applications. After introducing models, paradigms and algorithms for distributed software, various types of middleware systems are presented, focusing on the issues they have been designed to deal with.			
08/06/2022	**Mobile and Social Sensing Systems**	30/30 cum Laude	6
The student who successfully completes the course will have the ability to understand the properties and application areas of mobile and pervasive distributed systems; will be aware of the basic methodologies for designing mobile and pervasive systems; will be able to demonstrate a solid knowledge of the mainstream technologies for programming mobile and wireless sensing applications.			
13/09/2022	**Formal Methods for Secure Systems**	27/30	9
By the end of the course, students will have acquired knowledge about the theoretical foundation of formal methods and the methodologies and tools to model, analyse and formally prove security of computer-based systems. The course covers practical application of the theory to the following security issues: data confidentiality; malware detection; and cyber-physical systems security. Moreover, students will acquire knowledge on dependability, on fault tolerance techniques and on model-based quantitative evaluation of dependability.			
02/02/2023	**Internet of Things**	26/30	9
Students, who successfully complete this course, will become aware of the theoretical background on the Internet of Things (IoT) paradigms and its enabling technologies, as well as of the basic methodologies for developing IoT systems and applications.			
15/02/2023	**Intelligent Systems**	27/30	6
At the end of the course, the student will have acquired knowledge about the fundamental concepts of nature-inspired computational techniques, such as artificial neural networks, fuzzy systems, and genetic algorithms, and their application in a wide range of application areas.			
04/07/2023	**Electronics and Communications Systems**	27/30	9
In particular, the students: i) will build-up a general knowledge of the basic technologies that enable the design of wired (copper, fiber) and wireless communication systems.			

ii) will bear a specific knowledge of the main standard for communications in the transport and access network, and iii) will evaluate the relevance of such standards and technologies in the general context of a wide-area digital communications and computing network.			
??/??/??	**Sytems and Network Hacking**	??/30	9
The student will acquire knowledge about the most common vulnerabilities of software systems, computer architectures, networks and web applications, the ways in which these vulnerabilities are exploited by attackers and the countermeasures put in place to mitigate attacks			
??/??/??	**Performance Evaluation of Computer Systems and Networks**	??/30	9
Students should learn to create a model of a system from its specification or observation, extracting its salient features. Students should learn to understand the underlying causes of performance variation in a system, and to devise scenarios that confirm their intuitions about the latter. Students should be able to make predictions about the behavior or performance of a system from its model, and to verify whether or not these predictions are correct.			