Course “Data Management” – 16 h

Data are now recognized as a major organizational resource to be attained and managed like other assets such as land, labour and capital. The ability to structure, access, manage and leverage this valuable resource is becoming more and more critical to all organizations, large or small, public or private.
This course is designed to present the fundamental concepts and theories in data management, in order to promote their application to research activities and professional practice. An examination of Database Management Systems, database architectures, the role of data in decisional processes and the processes that guide the data lifecycle will be a focus of the course. Due to the importance of personal data in scientific research, it is mandatory to include in the course the main concepts about personal data protection regulation.
The course is divided in 3 lectures, given by Prof. Mauro Iacono, and 4 seminars, given by Professor M. Mastroianni.
The course will be in mixed mode, in presence and through the Microsoft Teams platform.

Seminar 1. Data Management basics: This seminar deals with the basic concepts related to data management.
Will be discussed: Information need, sources and users, the information pyramid and data attributes; relationship among data; the data life cycle; relationship between data life cycle and Software Development Life Cycle.
Seminar 2. Information value and quality in the Big Data era: Principles of information value; the Moody & Walsh laws; principles of data quality; web data quality: Trustworthiness and Provenance.
Seminar 3. Data Lifecycle Management (DLM): the use of DLM in data processing for scientific purposes; analysis and comparison of well-known DLM: DataOne, USGS, Hindawi. Redacting customized DLM.
Seminar 4. Big Data and privacy regulation: ethics of privacy; basics on the privacy regulations in some countries: general principles, right of users, accountability and policies; privacy by design and by default; main techniques to enforce personal data protection: data obfuscation techniques (anonymization, pseudonimization, blurring, etc.).

Lectures will take place on:

28 March 14-17 (Iacono)
30 March 14-17 (Iacono)
04 April 16-18 (Iacono)
11 Aprile 15.30-17.30 Seminario 1 (Mastroianni)
18 April 5.30-17.30 Seminario 2 (Mastroianni)
26 April 15.30-17.30 Seminario 3 (Mastroianni)
09 May 15.30-17.30 Seminario 4 (Mastroianni)