# . – Basic Information Technology

## Prof. Daniele Tessera

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

This course is aimed to provide a general introduction on basic hardware and software architectures of computer systems.

At the end of the course, students will be able to understand the basic functions of an electronic calculator in terms of hardware and software components, network communications and the operating principles of a database.

***COURSE CONTENT***

* An overview of information coding techniques for multimedia contents.
* The computer architecture focused on the role of CPU, main and storage memories.
* An overview of the evolution of operating systems with the aim to their main features and, in particular to process and virtual memory management.
* An overview to computer networks focused to the Internet. The packet switching approach and the role of layered network protocols.

Client/server and peer to peer architectures. A general description of internet protocols for mail exchanging and web browsing.

* An introduction to network security: symmetric and public key encryption algorithms and their applications.
* An overview to database architectures and data and to the relevance of mining techniques.

***READING LIST***

* J.G. Brookshear *Computer Science: An Overview,* (12th Edition., 2016) Pearson.
* Lecture notes and online contents.

***TEACHING METHOD***

Classroom lectures.

***ASSESSMENT METHOD AND CRITERIA***

Written test (open answers) and possible oral discussion.

***NOTES AND PREREQUISITES***

This is a basic first-year course which does not require previous knowledge.

*Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.*