



UNIVERSITÀ  
degli STUDI  
di CATANIA

DEPARTMENT OF DRUG SCIENCES  
Master's Degree in Pharmaceutical chemistry and  
technology  
Academic Year 2016/2017 - 1° Year

---

## COMPUTER SCIENCE A - L

3 CFU - 2° Semester

### Teaching Staff

#### FRANCESCO PAPPALARDO

**Email:** francesco.pappalardo@unict.it

**Office:** Dipartimento di Scienze del Farmaco, Piano 2

**Phone:** 0957384223

**Office Hours:** Lunedì 12-14, studenti; Venerdì 12:30-13:30, tesisti e tirocinanti

---

### LEARNING OBJECTIVES

At the end of the course, the student will acquire information theory basic concepts and programming and reasoning systems global knowledge; He will know the basic concepts of algorithms and he will be able to identify the main principles. Finally, he will own a global vision of the computer science applications to life science and drug discovery process.

---

### DETAILED COURSE CONTENT

#### Section 1.

Information theory basic concepts; Hardware, Software; Information technology; Computers types; PC components; Computer performances. Hardware: CPU; Memory; I/O peripherals; Memory devices. Software: applications, operating systems; Graphical User Interface; System development.

#### Section 2.

Algorithms; Algorithms properties; Descriptions; Constants and Variables; Propositions and Predicates; Flowcharts; Composition Schemes; Iterative Algorithms; Arrays; Structural analysis; Recursive Algorithms; Complexity: basic concepts; Numeration systems; Positional; Conversions; Binary operations; 8 and 16 numeral systems; Complements; Information coding; Bits, bytes and words; BCD Coding; Control bits; Computer arithmetic;

#### Section 3.

Computer Science Applications to Life Sciences and Drug Discovery

---

## **TEXTBOOK INFORMATION**

Teacher's notes

---