UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Fundamentals of Computer Science For Communication

1920-1-E2004P036

Learning area

n.1: Study of the means by which communication takes place

Learning objectives

Knowledge and understanding

- basic computer science concepts
- application level concepts
- theoretical and practical aspects related to the comprehension of communication mediated by technology

Applying knowledge and understanding

- Understanding and applying basic principles of programming
- Understanding and applying database principles
- Understanding how computers work
- Using computers with main applications

Contents

The course covers the underlying mechanisms of computers at an architectural level (codification of information,

and hardware infrastructures) and at the application level; for the application level both conceptual (algorithms, and databases) and practical aspects (main applications supporting single workers) will be presented in the light of computer mediated communication.

Detailed program

LECTURES

- Introduction: Historical perspective;
- Formalization concepts:

1. Basic Information Concepts: algorithms and programming;
2. An introduction to databases: information systems, conceptual modelling (ER model) and logical modelling (relational model and SQL language);

- Basic concepts:

1. Codification of information: binary arithmetic, and digital codification of various forms of information;
2. Hardware infrastructures: the functional structure of a computer, the instruction cycle in computers, and a note on Assembler and machine code;

PRACTICAL TRAINING:

main operating systems and most common applications (like word-processors and spreadsheets); experiences of programming principles.

Prerequisites

Nothing specific. A good knowledge of the basis of Mathematics enables a more aware use of the course contents.

Teaching methods

In addition to lectures, part of the teaching will take place with the presentation and discussion of solutions to exercises, the presentation of videos and examples from programming languages. Furthermore, practical training in computer labs will integrate the class teaching.

The material (slides and solution to exercises) is made available on the e-learning site of the course, so that it can also be used by non-attending students.

Assessment methods

For the lectures, the exam is written, and is organized in two parts: the first one regarding the assessment of formalization concepts and the second one regarding the assessment of basic concepts. The exam includes open questions and exercises aiming at ascertaining the effective acquisition of both the theoretical knowledge and the ability to apply it to cases.

The main evaluation criteria concern both the correctness of the answers to open questions and the correctness of the solutions provided to the exercises.

The exam is intended to be passed only if both of the two parts of the exam are rated at least as sufficient.

No in itinere examinations will be provided.

Upon student's request, the exam can be completed with an oral examination, that will increase or decrease the mark obtained in the written part up to 3 points. The oral exam will start from the discussion of the written text and will cover all the topics discussed in class during the course.

For what concerns computer science practical training, the students is requested to show at the pc the knowledge about the most common commands of the Office suite (Word and Excell). Students already possessing ECDL, any other accepted certification or who attended at least the 75% of the total lab hours are exempted.

Textbooks and Reading Materials

For the lectures

Sciuto D., Buonanno G., Fornaciari W., Mari L. (2014). Introduzione ai sistemi informatici, 5a Ed., McGraw-Hill (5° edizione o precedenti).

For the computer practical training

any text to prepare the base EDCL examination

Detailed information about any other learning material will be provided in the e-learning page of the course.