

PHILOSOPHICAL ISSUES OF COMPUTER SCIENCE

ECTS: 5

POLITECNICO DI MILANO, Sede di Milano, Campus Leonardo
Scuola di Ingegneria Industriale e dell'Informazione, Corso di Laurea Magistrale in Ingegneria Informatica

Instructor: Viola SCHIAFFONATI

Program

Aims and goals

The aim of this course is to improve the capacity of computer engineering students to critically analyze some key concepts of computer science. The first part of the course will deal with the presentation of the conceptual tools to be used in the analysis. The second part will host the discussion of key concepts and issues of computer science and engineering. The third part will consist in the presentation and supervision of the final project.

Program of lessons and seminars

1. Historical-conceptual introduction to philosophical problems of computer science: the philosophy of computer science and its topics; the disciplinary status of computer science and computer engineering; the reasons of a philosophical analysis.
2. Critical analysis of key concepts of computer science: computation and its philosophical aspects; minds, brains, and machines; computational models of consciousness; machines and thoughts; simulations and experiments; experimenting with robots; information and machine ethics; Gödel's theorems and their impact on AI.
3. Supervision of the final project: it is required to write an original paper on one of the topics presented during the course or on related topics. This project will be supervised by the instructor in order to meet the standards required by scientific publications.

Prerequisites

No prerequisite is required.

Bibliography

Required bibliography

Scientific papers available on the course web page.

Other materials

If necessary, other didactic material will be distributed during the course.

Requirements

Grading will be on the following basis.

50% final project

50% oral discussion of the project and related topics

Notes

For more information about this course, please visit:
<http://home.dei.polimi.it/schiaffo/TFI/>