

Course title: **Understanding Artificial Intelligence**

Classroom code: **4esvnlq**

Course venue: **room 2.2, Engineering Campus, Building A**

Course schedule:

- Friday, September 26, from 2:30 p.m. to 5:30 p.m.
- Friday, October 17, from 2:30 p.m. to 5:30 p.m.
- Friday, October 24, from 2:30 p.m. to 5:30 p.m.
- Friday, October 31, from 2:30 p.m. to 5:30 p.m.
- Friday, November 7, from 2:30 p.m. to 5:30 p.m.
- Friday, November 14, from 2:30 p.m. to 5:30 p.m.
- Friday, November 21, from 2:30 p.m. to 5:30 p.m.

Course program:

- History of AI: a historical overview from rule-based systems to modern technologies;
- Understanding Machine and Deep Learning: how machines learn from data;
- Understanding Generative AI: Generative Adversarial Networks, Large Language Models, Diffusion models;
- AI across disciplines: AI in science and engineering, AI in humanities and social sciences, AI in economics, and more.

Final Evaluation: Active participation during in-class discussions is required (e.g., bring your use cases in "AI across disciplines" module). The final examination consists of an oral presentation of the student's own contribution (for example, using PowerPoint slides) exploring the application of AI in their own field, relating the techniques used to those learned during the course. The examination will take place at the end of the course, in class with all the students or, for those unable to attend, on an alternative date to be arranged.

Prerequisites (optional):

- basic arithmetic and mathematical concepts, i.e., understanding of summation (Σ notation), basic functions (e.g., linear, exponential, logarithm).
- basic computational thinking – no programming required, but understanding concepts like algorithms and optimization strategies would be beneficial.
- basic probability and statistics, i.e., a general understanding of concepts like probability distributions, averages, and standard deviation.
- basic linear algebra (optional) – vectors, matrices, and multivariate functions, though this will be explained intuitively in the course.