UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Estimation Theory

2526-117R-ESTITH

Title

Estimation Theory

Teacher(s)

Pasquale Palumbo

Language

English

Short description

The course formalizes the problem of estimating unknown quantities from direct or indirect measurements. Within the framework of the deterministic approach (where uncertainties are not described probabilistically), the concepts of estimation, distance between true and estimated measurements, and error functional are introduced. For linear relationships between unknown quantities and measurements, the cases of underdetermined and overdetermined systems are discussed in detail.

The concepts developed in the course are applied to the identification of a biological system based on experimental data. The case study examined this year concerns the identification of a Lotka–Volterra model applied to a

microbial community.

CFU / Hours

1CFU / 8 hours

Teaching period

3-4 February 2026

Sustainable Development Goals