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# Simulation of logistics systems

## Finalità

The aim of this class is to give a treatment of the main aspect of simulation study in logistics contexts, including modeling, simulation languages, validation and output data analysis.

## Programma

Basic Simulation Modeling (the nature of simulation; system, modes and simulation; discrete event simulation, distributed simulation, steps in a simulation study, other types of simulation; advantages, disadvantages and pitfall of simulation).

Review of basic probability and statistics.

Building valid and credible simulation models.

Selecting input probability distributions.

Output data analysis for a single system.

Comparing alternative system configuration.

Experimental design and optimization.

## Attività d'esercitazione

In order to prepare the students in making the necessary connection between conceptual principles and their actual application in logistics contexts, this part of the course avails itself of exercises and computer laboratory lectures. The programming environment used is the Excel and Simul8 software.

## Modalità d'esame

A test and an oral examination (if required). The active participation to lectures and other activities are evaluated.

## Testi consigliati

A.M. Law and W.D. Kelton, Simulation modeling & analysis, McGraw-Hill, Inc.,