

Mathematics

Probability and statistics

IDENTIFICATION

CODE : GE-4-S2-EC-MA3
ECTS : 3.0

HOURS

Lectures : 20.0 h
Seminars : 22.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student
contact : 42.0 h
Personal work : 20.0 h
Total : 62.0 h

ASSESSMENT METHOD

1 x 1,5h 1 x 3h

TEACHING AIDS

Lecture notes of course and
exercices

TEACHING LANGUAGE

French

CONTACT

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AIMS

Modelization and resolution of non deterministic concrete cases
Knowledge and good understanding of basic statistic methods
Give a basic ability to use concepts of probability in concrete situations
Introduce students to statistics methods (estimation, inference tests, ...).

CONTENT

Probabilities and conditional probabilities
Descriptive statistics
Random variables and vectors, moments
Classical distributions and derivatives
Laws of great numbers, theorem central limit
Laws of samples
Estimation (likelihood, bayesian) and intervals of confidence
Tests of hypothesis and fitness
Linear regression
Introduction to design of experiments

BIBLIOGRAPHY

Ruegg - Probabilités et Statistiques, PUR
Saporta - Probabilités, analyse des données et statistique - Technip
Ross - Initiation aux probabilités, PUR

PRE-REQUISITE

Basic notions of integration and analysis
Notion of probability [MA2]