Calcul des probabilités et statistiques

Lecturer
Yves DE SMET (Coordinator)

Course mnemonic
MATH-H2002

ECTS credits
5 credits

Language(s) of instruction
Unknown

Course period
First term

Campus
Solbosch

Course content

Descriptive statisitics (1 and 2 dimensions). Probability axioms. Random variables. Combination of random variables. Typical random variables. Fundamental theorems. Statistical inference. Introduction to linear programming.

Objectives (and/or specific learning outcomes)

After completing this teaching unit the student will manage the basic concepts of probabilty and statistics (including some elements of operational research). He will be able to perform an exploratory data analysis, to model simple stochastic problems with particular random variables and to understand key concepts of statistical inference (hypothesis testing and confidence intervals).

Teaching method and learning activities

Lectures and exercices.

Contribution to the teaching profile

Be capable of formulating and solving complex or open-ended technical and scientific problems by using abstraction, modeling, simulation, and multi-disciplinary analysis while satisfying the requirements of university-level research and responding to requirements, constraints, the set context and the technical, socio-economical ethical and environmental stakes—all with the purpose of obtaining concrete solutions. Innovate, by combining rigor and creativity, using a critical and demanding scientifical methodology (including state-of-the-art, problem statement, fixing hypothesis, modeling, validation, argumentation, and peer-review).

References, bibliography and recommended reading

"Probability and Statistics for Engineers and Scientists" Walpole, Myers, Myers, Ye, Pearson International Edition, 8th edition

Course notes

Podcast, Syllabus and Université virtuelle

Other information

Place(s) of teaching

Solbosch

Contact(s)

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Evaluation method(s)

written examination

Evaluation method(s) (additional information)

Written exam.

Determination of the mark (including the weighting of partial marks)

Written exam: 3 questions on theory (50% of the final grade), 3 questions on exercices (50% of the final grade) - an additional question about operations research.

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the Brussels School of Engineering

BA-IRCI | Bachelor in Engineering Sciences | option Bruxelles/unit 2