COURSE DETAIL

PROBABILITY, STATISTICS, AND COMBINATORICS

Country
France

Host Institution
University of Bordeaux

Program(s)
University of Bordeaux

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
114

UCEAP Course Suffix

UCEAP Official Title
PROBABILITY, STATISTICS, AND COMBINATORICS

UCEAP Transcript Title
PROB STATS&COMBTRCS

UCEAP Quarter Units
6.00

UCEAP Semester Units
4.00

Course Description

The main objective of this course is the acquisition of language and basic probabilistic and statistical concepts, and their uses in computer science. The student must apply mathematical skills, logic, and reasoning. This course deals with notions of probability, statistics, and combinatorics. The teaching focuses on discrete probabilities (event concept, probabilistic calculation rules, conditional probabilities, random variables, expectation, variance, probability laws: uniform, binomial, geometric and Poisson). Practical manipulations (simulation and implementation) deepen the theoretical notions of the course. The link with certain continuous laws is approached (normal law, exponential). On the combinatorial aspects, the notions of elementary counts (i.e., sums, products, combinations), recurrences and generating function are approached and applied to the counting of words, sequences and discrete structures usual in computer science. Descriptive statistics (i.e., series, histograms, mean, standard deviation) and an introduction to hypothesis testing are also discussed.

Language(s) of Instruction
French

Host Institution Course Number
4TIN404U

Host Institution Course Title
PROBABILITY, STATISTICS, AND COMBINATORICS

Host Institution Campus
UNIVERSITÉ DE BORDEAUX: Collège des Sciences et Techniques

Host Institution Faculty

Host Institution Degree

Host Institution Department
Mathématiques

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