

THE PROBABILITY THEORY AND MATHEMATICS STATISTICS (1st YEAR I, 1st SEMESTER)

Credit value (ECTS): 4

Course category: Mandatory)

Course holder: Lecturer Ciprian CHIRUȚĂ PhD.

Discipline objectives (course and practical works)

Become familiar with the main types of issues and approaches in mathematics and applying mathematical concepts in the field of environmental engineering.

Formation of skills to use reasoning skills rigorous and individual study;

Learning the techniques for calculating household in biological sciences, particularly mathematics statistical techniques (both descriptive and decision-making);

Providing the necessary minimal mathematical modeling and solving problems specific to other subjects;

Skills training necessary for calculating mathematical reasoning domination in using statistical tests. Understanding probability theory with practical examples using appropriate;

Application of theoretical concepts being exposed to solve specific problems and modeling processes.

Knowledge of statistical research methods in the field and their application in the profile disciplines.

Contents (syllabus)

Course (chapters/subchapters)
Probability theory
Field events. Probability field. Definitions. Examples. Boole algebra of events. Depending on probability. Conditional probabilities. Total probability formula. Classical probability Scheme
Random variables. Definitions. Examples. Operations random variables. Function key. Numerical characteristics of distributions random variables usual discrete and continuous. Law of large numbers. Central limit theorem.
Descriptive statistics
Statistical series. Statistical series one-dimensional and multidimensional. Features numerals and spreading. Linear correlation, multiple.
Inferential statistics
Selection theory. Simple random selection with and without repetition.
Estimation theory. Estimates point. Estimates by confidence intervals
Hypothesis testing. Parametric and nonparametric tests
Practical works
Counting methods. Arrangements. Permutations. Combinatory.
Definitions of probability.
Classical probability Scheme
Random variables. Definitions. Examples. Operations with random variables. Distribution function.

Common distributions of discrete and continuous.
Numerical characteristics of random variables
Correlations, regressions
Estimates point
Estimates by confidence intervals.
Parametric tests to verify hypotheses regarding media and dispersion.

Bibliography

1. Aldea Florica, *Matematici aplicate în științele agricole și silvice*, Editura Risoprint, Cluj Napoca, 2006.
2. Bunu I. coord. colectiv de autori, *Matematici economice*, Departamentul Editorial Poligrafic al Academiei de Studii Economice a Moldovei, Chișinău, 2012.
3. Burdujan I., *Elemente de algebră cu aplicații în biologie*, Ed. Pim, Iași, 2006.
4. Diaconița V., Spînu M., Rusu Ghe., *Matematici aplicate în economie*, Ed. Sedcom Libris, Iași, 2004.
5. Chiriță, S., *Probleme de matematici superioare*, Editura Didactica si pedagogica, Bucuresti, 1989
6. Diaconița V., Spînu M., Rusu Ghe., *Teste grilă - Matematici aplicate în economie*, Ed. Sedcom Libris, Iași, 2004.
7. Ganga, M., *Elemente de analiză matematică pentru clasa a XI-a, partea întâi*, Editura Mathpress, Ploiești, 2000,
8. Ganga, M., *Elemente de analiza matematica pentru clasa a XI-a, partea a doua*, Editura Mathpress, Ploiești, 1999,

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Written examination	70%
Appreciation of the activity during the semester	Oral assessment during the semester and written verification tests	30%

Contact

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