

Probabilité I

Level: Bachelor's degree - first year - L1

Degree course: Licence

Semester: S2

Timetable: 12 hours of lectures (CM) and 12 hours of practical work (TD)

Lecturer: Laurence Grammont

Contact :laurence.grammont at univ-st-etienne.fr

Course objectives: Description (5 to 10 lines).

This is a hybrid course between analysis and probability. The objective is to study continuous random variables. To do this we need the analysis tool that is integration.

Course outline :

1. Primitives and integral calculus

1.1 Primitives

1.2 Simple integrals

1.3 Integral calculus

1.4 Generalized or improper integrals

2. Continuous Random Variables (C.R.V.)

2.1 Distribution function

2.2 Probability density

2.3 Quantiles of a CAV

2.4 Mathematical expectation of a CAV

2.5 Variance and standard deviation of a CAV

3 Some continuous models

3.1 Uniform continuous law

3.2 Exponential law

3.3 Gaussian or normal distribution

3.4 Two fundamental theorems

Skills developed: (5 to 10 lines).

Acquisition of mathematical knowledge with a view to understanding the sometimes complex modelling of economic phenomena.

Learning the principle of mathematical demonstration.

Learning mathematical rigour.

Assessment methods: Continuous assessment

Prerequisites (to be mentioned only if applicable) :

Notion of derivative, notion of probability law

Bibliography/references: A handout is sufficient.