

# Statistical Modelling



ECTS  
4 crédits



Hourly volume  
53h

## Introducing

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### Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

- The use of statistical tests for goodness-of-fit, independence, populations comparisons
- The characteristics of a linear model and a generalized linear model, and their use for statistical modelling

At the end of this module, the student should be able to:

- Choose a test procedure suited to a given problem
  - Build nonparametric test procedures to compare two populations
  - Build goodness-of-fit tests for a single distribution or a family of distributions
  - Choose a linear model or a generalized linear model suited to a given problem
  - Estimate the parameters in a linear model and a generalized linear model
  - Use statistical tests to validate or invalidate hypotheses on these linear models and generalized linear models.
  - Implement a variable selection strategy
  - Perform a complete statistical analysis on a real data set using a linear model or a generalized linear model
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## Necessary prerequisites

Probability and Statistics (I2MIMT31)  
Statistics (I3MIMT15)

## Practical info

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### Location(s)

 Toulouse