

Numerical analysis

Introducing

Description

The course covers the following topics: numerical errors, solving non-linear equations, numerical integration, direct solutions of linear systems, matrix norms and conditioning, iterative methods for solving linear systems, least squares methods, and ordinary differential equations.

Objectives

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

Some notions of numerical analysis and scientific computing.

The student should be able to:

Choose an appropriate method for solving a mathematical problem.

Use the Python language to implement numerical analysis methods.

Necessary prerequisites

Mathematical concepts are based on undergraduate linear algebra and analysis. Practical work is based on relatively simple programming.

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

 Toulouse