



MATH2180 Numerical analysis II

[45h] 4.5 credits

This course is taught in the 1st and 2nd semester

Teacher(s): Alphonse Magnus
Language: French
Level: Second cycle

Aims

Analysing the fundamental mathematics of the main modern methods (finished elements and differences) of numerical resolution of equations to partial derivatives.

Main themes

Methods of finished elements to elliptic problems: variational formulations of limit problems, construction of spaces of finished element type, Sobolev spaces and generalized solutions, error estimations and convergence properties. Methods of finished differences to evolution problems: problems of initial conditions to constant coefficients and variable coefficients with two and three levels, relations between stability and convergence, applications to the energy method.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: good formation in mathematics.

Evaluation: oral examination (2h30) at the end of the year.

Support: course notes are supplied each year. Files may be obtained on the web: <http://www.math.ucl.ac.be/~magnus/NUM2/>

Other credits in programs

MATH22/G Deuxième licence en sciences mathématiques (4.5 credits)