Numerical Analysis - Units in Year 3 and 4

• Theoretically beautiful and can be demanding.

• Stongly relevant to applications - science, industry, finance...

• Mathematical models typically cannot be solved without numerical methods.

• The **challenge** is to develop methods, and **prove** that they are **reliable** and implement them in an **efficient** educated way.

• The proofs suggest innovative new methods

Unit Snapshots

MA30051 : Numerical Linear Algebra - *solve* 10^4 *simultaneous linear equations*
MA30171 : Numerical Solution of PDEs I *find the temperature in a conducting body of arbitrary cross section*
MA40171 : Numerical Solution of PDEs II *Solve the wave equation with varying wave speed accurately in space and time*
MA40050 : Nonlinear Equations and Bifurcations *accurately compute the solution of problems having many solutions - e.g. combustion*

Units - with prerequisites from Year 2

	Semester 1	Semester 2
Year 3	**MA30051** *Analysis 2A* *Algebra 2A,2B* *Numerical Analysis*	**MA30171** *Analysis 2A, 2B* *Numerical Analysis*
Year 4	**MA40171** *MA30170*	**MA40050** *Analysis 2A* *Numerical Analysis*

Assessment of year 3/4 units:

- 75% exam
- 25 % coursework (like MA20222 Numerical Analysis): Mix of theoretical problems, and computing (running programs and modest programming skills - well prepared by XX10190).

A viable programme if you did not take NA this year:

Next year:

First Semester:	Numerical Analysis (MA20222)
Second Semester:	MA30170 and/or MA40050

MMath students may take all four options over the two years if they take MA20222 in First semester Year 3:

These slides available at

`http://people.bath.ac.uk/masigg/options`