

## Five Lectures on Maple: Overview

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### Part I: Basic concepts

- 1 General principles
  - 2 Entering commands
  - 3 Basic operations; types of objects
  - 4 Graphics
  - 5 Fundamental data structures
  - 6 User-defined functions
  - 7 Equations and systems of equations
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### Part II: Analysis with Maple; Programming

- 1 Limits and series
  - 2 Functions, differentiation, integration, ...
  - 3 Control structures
  - 4 Procedures
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### Part III: Data structures; Procedures in more detail; Data output

- 1 Tables
  - 2 Arrays
  - 3 Vectors and Matrices
  - 4 Storage management
  - 5 Stack, queue, heap
  - 6 General form of a procedure; examples
  - 7 Argument evaluation in procedure calls
  - 8 Evaluation rules for variables
  - 9 CPU stop watch
  - 10 Formatted output; using data files
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## Part IV: [Numerical] Linear Algebra

- 1 Vectors and Matrices
- 2 Package LinearAlgebra: Basic Operations
- 3 Some useful general functions from LinearAlgebra
- 4 Finding a rule by experiment
- 5 Numerical Linear Algebra I: The basics
- 6 Numerical Linear Algebra II: Hardware floats
- 7 Numerical Linear Algebra III: Examples

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## Part V: Extensions; some special topics

- 1 Polynomial equations and systems
- 2 Differential equations
- 3 Some further useful commands
- 4 Interactive input
- 5 Source code on external files
- 6 Flexible argument lists
- 7 Useful packages
- 8 Final remarks

### Extra topic:

Demonstration of a parallel computation in Maple using the Grid package

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