MAT 3535: Introduction to Maple, Matlab, and LaTeX

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1 Introduction to Maple 10

Topics

Day 0 (a) Background and History

Day 1 (a) Intro to Computer Algebra
(b) The First Steps: Calculus on Numbers
(c) Variables and Names

Day 2 (a) Polynomials and Rational Functions
(b) Manipulation of Polynomials and Rational Functions

Day 3 (a) Functions

Day 4 (a) Differentiation
(b) Integration and Summation

Day 5 (a) Series, Approximations, and Limits
(b) Simplifications

Day 6 (a) Graphics

Day 7 (a) Solving Equations
(b) Differential Equations

Day 8 (a) The `LinearAlgebra` Package

Day 9 (a) The Assume Facility

Enhancement Topics

1. Getting Around with Maple
2. Internal Data Representation
3. Composite Data Types

2 Introduction to Matlab

1. Intro to Matlab

3 Introduction to LaTeX

1. The LaTeX Typesetting System
2. $\mathcal{A}_{\mathcal{M}}\mathcal{S}$–LaTeX: The AMS Document Classes (`amsart`, `amsproc`, `amsbook`) and the `amsmath` and `amsthm` Packages
3. Michael Downes' "Short Math Guide"

4 Textbooks

Required

1. André Heck, Introduction to Maple, Springer-Verlag.

Reference

- Frank Mittelbach, et al., The LaTeX Companion, Addison Wesley.
- Helmut Kopka and Patrick Daly, A Guide to LaTeX2$_\varepsilon$, Addison Wesley.
- Leslie Lamport, LaTeX: A Documuent Preparation System