

MAT 3535: Introduction to Maple, Matlab, and L^AT_EX

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1 Introduction to Maple 10

Topics

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|-------|--|-------|---|
| Day 0 | (a) Background and History | Day 5 | (a) Series, Approximations, and Limits
(b) Simplifications |
| Day 1 | (a) Intro to Computer Algebra
(b) The First Steps: Calculus on Numbers
(c) Basic Numeric Data Structures | Day 6 | (a) Graphics |
| Day 2 | (a) Variables and Names
(b) DAGs
(c) Evaluation
(d) Polynomials and Rational Functions | Day 7 | (a) Solving Equations
(b) Differential Equations |
| Day 3 | (a) Manipulation of Polynomials and Rational Functions
(b) Functions | Day 8 | (a) The LinearAlgebra Package |
| Day 4 | (a) Differentiation
(b) Integration and Summation | 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 L^AT_EX

1. The L^AT_EX Typesetting System
2. $\mathcal{A}\mathcal{M}\mathcal{S}$ -L^AT_EX: 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 L^AT_EX Companion](#), Addison Wesley.
- Helmut Kopka and Patrick Daly, [A Guide to L^AT_EX2_ε](#), Addison Wesley.
- Leslie Lamport, [L^AT_EX: A Document Preparation System](#)