

Part 1/3:

Mathematical Foundations

1. Course Overview - From Sets to Regression
2. Set Theory Basics and Notation
3. Functions and Mapping Concepts
4. Vector Spaces and Basis
5. Inner Product and Orthogonality
6. Matrix Operations and Properties
7. Inverse Matrices and Determinants
8. Eigenvalues and Eigenvectors
9. Differentiation and Partial Derivatives