



itie Knowledge Solutions

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CEML02: Numerical Computing with MATLAB (3-days)

Numerical Computing with MATLAB is an introductory course on numerical methods and technical computing with MATLAB environment. The course covers major mathematical functionalities and vector/matrix computation with MATLAB. The detailed content of the course is given below.

Day 1 of 3

- A quick overview of MATLAB computing environment
- Arithmetic, trigonometric, and complex-valued and logarithmic operations
- Basic matrix operations
- Linear equations
- Data interpolation
- Zeros and roots
- Obtaining partial fractions

Day 2 of 3

- Polynomial operations
- Least squares solutions
- Integral solutions
- Ordinary differential equations
- Partial differential equations

Day 3 of 3

- Fourier analysis of signals
- Random numbers
- Eigen values and singular values
- Linear discriminate analysis (LDA)
- Principal component analysis (PCA)