

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Chemical Engineering - NOC:MATLAB Programming for Numerical Computation

Subject Co-ordinator - Dr. Niket S.Kaisare

Co-ordinating Institute - IIT - Madras

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Course Introduction
- Lecture 2 - Basics of Programming using MATLAB
- Lecture 3 - Array Operations in MATLAB
- Lecture 4 - Loops and Execution Control
- Lecture 5 - Tutorial
- Lecture 6 - MATLAB Files -- Scripts and Functions
- Lecture 7 - Plotting and Output
- Lecture 8 - How to submit MATLAB Assignment
- Lecture 9 - Errors in Numerical Computation
- Lecture 10 - Truncation Errors and Taylors Series
- Lecture 11 - Round-Off Errors; and Iterative Methods
- Lecture 12 - Step-wise Methods and Error Propagation
- Lecture 13 - How to get MATLAB Online access (for all enrolled students of this course)
- Lecture 14 - Differentiation in Single Variable
- Lecture 15 - Higher Order Differentiation Formulae
- Lecture 16 - Partial Differentials (Bonus)
- Lecture 17 - Numerical Integration
- Lecture 18 - Multiple Applications of Integration Formulae
- Lecture 19 - In-Build MATLAB Integration Functions
- Lecture 20 - Basics of Linear Algebra
- Lecture 21 - Gauss Elimination and Back-Substitution
- Lecture 22 - LU Decomposition and Partial Pivoting
- Lecture 23 - Gauss Siedel Method
- Lecture 24 - (Tutorial)
- Lecture 25 - Tri-Diagonal Matrix Algorithm
- Lecture 26 - Nonlinear Equations in Single Variable
- Lecture 27 - Using MATLAB command fzero
- Lecture 28 - Fixed Point Iteration in Single Variable
- Lecture 29 - Newton-Raphson (single variable)

Get Digi-MAT (Digital Media Access Terminal) For High-Speed Video Streaming of NPTEL and Educational Video Courses in LAN

www.digimat.in

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

- Lecture 30 - Using MATLAB command fsolve (multi-variable)
- Lecture 31 - Newton-Raphson (multi Variable)
- Lecture 32 - Introduction
- Lecture 33 - Linear Least Squares Regression
- Lecture 34 - Nonlinear and Functional Regression
- Lecture 35 - Interpolation Functions in MATLAB
- Lecture 36 - Introduction and Euler\'s Method
- Lecture 37 - Runge-Kutta (RK-2) method
- Lecture 38 - MATLAB ode45 algorithm
- Lecture 39 - Higher order Runge-Kutta Methods
- Lecture 40 - Error Analysis
- Lecture 41 - Multi-Variable ODE
- Lecture 42 - Stiff Systems & Solution using ode15s
- Lecture 43 - Method of Lines for transient PDEs
- Lecture 44 - A Final Example
- Lecture 45 - Tutorial