

EME5 Introduction to Computer Programming for Engineering Applications
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Topics

1. Introduction to Computer Hardware and Software
2. Getting Started
3. Scalar Types, Number Systems, and Input/Output
4. Operators and Expressions
5. Statements and Control Flow
6. Functions and Introduction to 2D Plotting Using `fplotxy()` and `fplotxyz()`
7. Preprocessing Directives
8. Storage Classes
9. Arrays and Introduction to 2D Plotting Using `plotxy()`
10. Pointers
11. Characters and Strings
12. Structures and Enumerations
13. File Processing
14. Computational Arrays, Matrix Computations, and Numerical Analysis
15. 2D/3D Plotting
16. Introduction to MATLAB and Comparison Study with C
 - Comparison study of type-less versus typed languages. Style of MATLAB programming.
 - Introduction to matrix computation and linear algebra in MATLAB.
 - Iterative and selection statements in MATLAB .
 - Operators in MATLAB.
 - Functions in MATLAB.
 - Plotting in MATLAB.
17. Introduction to some commonly used libraries and software packages in C/C++/MATLAB for engineering applications.