

Year & Sem: E1SS	Course Code: EC1901	Course Name: Matlab	No. of Credits: 4	L 2	T&PS 2	P 0
Unit-I: MATLAB Environment: Introduction, Matlab environment, Matlab as a calculator, Matlab Online, Syntax and Semantics, Help, Plotting. Matrices and Operators: Introduction, the Colon Operator, Accessing Parts of a Matrix, Combining and Transforming Matrices, Arithmetic Part1, Arithmetic Part2, Operator Precedence. Unit-II: Functions: Introduction, Function I/O, Formal Definition of Functions, Sub functions, Scope, Advantages of Functions, Scripts, and Problem Solving. Unit-III: Programmer's Toolbox: Introduction, Matrix Building, Input - output, Plotting, Debugging. Selection: Selection, If – Statements, Relational and Logical Operators, Nested If – Statements, Variable Number of Function Arguments, Robustness, Persistent Variables. Unit-IV: Loops: For – Loops, While – Loops, Break Statements, Logical Indexing, Preallocation. Data Types: Introduction, Strings, Structs, Cells. Unit-V: File Input/ Output: File I/O, Excel Files, Text Files, Binary Files. Applications of Matlab in Electronics, Communication, Signal Processing, Image Processing. Unit-VI: Simulink: Getting Started, Simulink Library Browser, Connections, Block Specification, Toolboxes, Building Systems, Applications. References/Text Books: (1) Books: (i) Computer Programming with MATLAB by J. Michael Fitzpatrick and Akos Ledecz (ii) Getting Started with MATLAB: A Quick Introduction for Scientists and Engineers by Rudra Pratap Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations. Video Lectures (Web Links): https://ocw.mit.edu/courses/mathematics/18-s997-introduction-to-matlab-programming-fall-2011/index.htm & https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-094-introduction-to-matlab-january-iap-2010/index.htm (3) https://in.mathworks.com/videos/getting-started-with-matlab-68985.html (4) https://www.mathworks.com/examples/ (5) https://www.coursera.org/learn/matlab Study Materials (Web Links): 1. 2. Problems & Solutions (Web Links):						