

Branch Name:	COMPUTER ENGINEERING / INFORMATION TECHNOLOGY / ARTIFICIAL INTELLIGENCE AND DATA SCIENCE / INFORMATION AND COMMUNICATION TECHNOLOGY / MECHANICAL ENGINEERING / CIVIL ENGINEERING/ ELECTRICAL ENGINEERING
Program Code:	ET103 / ET105 / ET108 / ET107 / ET101 / ET106 / ET109
Course Title:	Engineering Mathematics-II with Computing tools Practical
Course Code:	2ET1000102P
Pre-requisite Course:	Basic about computer operating system.

Course Objectives:

The objective of this course is to learn mathematical concepts using SCILAB

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Course Contents:

Unit	Details	Contact Hours
1	a. Creating vectors, row vectors and column vectors. b. Create different matrices and explore its rows, columns, and diagonals. c. Perform different basic operation of vectors on above created matrices. d. Perform different basic operation of matrices on above created matrices. e. Explore length (), dim (), ncol (), nrow () operators on above matrices and vectors. f. Explore commands for Selecting and extracting elements from above matrices and arrays.	8
2	a. Solution of system of equations using matrix method. b. Solution of system of equations using Gauss elimination method. c. Finding eigen values and eigen vectors. d. Checking stability of the system	8
3	a. Understanding plotting Techniques and its interpretations b. Understanding subplots c. Understand 3-D plots and its interpretation	4
4	a. Applying looping techniques to solve mathematical problems. b. Understanding conditional statements and applying the same to mathematical problems	4
5	a. Writing small program using loops and conditional statements for solution of mathematical expansions and problems. b. Executing the written programs and getting the output.	6

Reference Books:

1. Programing using SCILAB Theory and Practical by Akhilesh Kumar
2. Introduction to SCILAB by Michael Baudin

Course Outcomes:

At the end of the course, students will be able to:

Course Outcomes	Description	Bloom's Taxonomy Level
CO1	Discuss the basic structure of SCILAB tool box	Understanding (2)
CO2	Demonstrate the concepts of variables, vectors, and matrices	Understanding (2)
CO3	Use symbolic math toolbox in SCILAB to solve the system of linear equations	Applying (3)
CO4	Interpret functions using plotting techniques. Write a small program to solve mathematical equations.	Applying (3)

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	M	M		M											
CLO2	H	M			M							L				
CLO3	H	M	M		M											
CLO4	M	M	M		M							L				

H: High, M: Medium, L: Low