

Certification based Value Added Course



SciLab

SCILAB FOR BEGINNERS

21.09.2021 to 25.09.2021

Resource Person(s)

Dr.K.L.Narasimhamu

Professor
Dept. of ME, SVEC

Dr.N.Manikandan

Assoc. Professor
Dept. of ME, SVEC

Mr.S.Praveen kumar

Asst. Professor
Dept. of ME, SVEC

Target Group
IV B.Tech(ME) students

Venue
CAED Lab , Room No.2707

Timings
09:30 AM- 12:30 PM
02.00 PM - 05.00 PM

Organized by
DEPARTMENT OF MECHANICAL ENGINEERING
SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

Sree Sainath Nagar, A. Rangampet, Tirupati - 517 102.



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Department: ME | Date: 21st September to 25th September, 2021

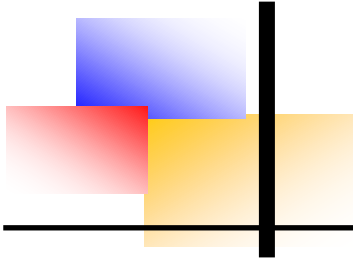
A Value-Added Course on
“SCILAB FOR BEGINNERS”
21.09.2021 to 25.09.2021

Course Trainer(s) : Dr.K.L.Narasimhamu, Professor, Dept of ME
Dr. N.Manikandan, Asso. Professor, Dept of ME
Mr.S.Praveen kumar, Asst. Professor, Dept of ME

Target Group : IV B.Tech(ME) Students

Learning and Outcomes of the Course:-

- Able to understand the basic concepts of programming.
- Able to understand how to apply SCILAB code for simulation/implementation for the verification of mathematical functions in Mechanical Engineering.
- Understand the main features of the SCILAB program development environment to enable it's usage in the higher learning.
- Implement simple mathematical functions/ equations in numerical computation environment such as SCILAB.
- Interpret and visualize simple mathematical functions and operations by using plots.



SCILAB FOR BEGINNERS

COURSE CONTENTS

INTRODUCTION TO SCILAB

Introduction to Numerical Computing
Various Software Alternatives
History
Installation
Workspace
Command Prompt
Variable Browser
SciNotes

WORKING WITH SCILAB

Working with Scilab
Working with Scilab Files
Formatting Command Prompt
Display
Operator Precedence
Variable Browser Window
Clearing Variables
Comments
Predefined Constants
Common Mathematical Functions
Variable
 Assignment Operator =
 Naming Conventions for
Variables
 Global and Local Variables
 List of Variables
Data Types
Numerical Data
How to Store Floating Point
Numbers
Formatted Display of Numbers
Boolean Data
Strings

WORKING WITH ARRAYS

Introduction
Arrays and Vectors
Operations on Arrays and Vectors
Elementwise Operations
Matrix Multiplication
Inverse of Matrices
det()
rank()
trace()
meshgrid
ndgrid
Magnitude of a Vector
Random Matrix

Using Indices to Make New Vectors
Slicing

Appending Rows and Columns

Deleting a Row and/or Column of a
Matrix
Concatenation along a Dimension
Logical Operations on Arrays
Automatic Generation of Vectors
Linearly Spaced Vectors
Logarithmically Spaced Vectors
Matrix Manipulations
Scaling a Matrix
Reshaping a Matrix
Special Matrices
Upper and Lower Triangular Matrices
Ones and Zeros Matrices
Diagonal Matrices
Special Matrices
Mathematical Matrix Operations
Dot Products
Cross Products

PLOTTING

Introduction
2D Plotting
plot(x,y)
plot2d(), plot2d2(), plot2d3(), and
plot2d4()
polarplot()
Plotting Multiple Plots in the Same
Graph
Plotting Multiple Plots Separately
3D Plots

LOOPS AND CLAUSE

roduction
Loops
while
Infinite Loops
for
if-elseif-else

FUNCTION AND SCRIPT

Function
Script



Prepared by

Dr.K.L.Narasimhamu
Dr. N.Manikandan
Mr.S.Praveen kumar

A Value-Added Course on
"SCILAB FOR BEGINNERS"
 21.09.2021 to 25.09.2021
Detailed Day Wise Syllabus

Chapter No.	Topic	No. of Hours
Chapter 1	Introduction to Scilab	
	Introduction to Numerical Computing Various Software Alternatives History Installation Workspace Command Prompt Variable Browser SciNotes	3
Chapter 2	Working with Scilab	
	Working with Scilab Working with Scilab Files Formatting Command Prompt Display Operator Precedence Variable Browser Window Clearing Variables Comments Predefined Constants Common Mathematical Functions Variable Assignment Operator = Naming Conventions for Variables Global and Local Variables List of Variables Data Types Numerical Data How to Store Floating Point Numbers Formatted Display of Numbers Boolean Data Strings	6
Chapter 3	Working with Arrays	6
	Introduction Arrays and Vectors Operations on Arrays and Vectors Elementwise Operations Matrix Multiplication Inverse of Matrices det() rank() trace() meshgrid ndgrid Magnitude of a Vector Random Matrix Using Indices to Make New Vectors Slicing Appending Rows and Columns Deleting a Row and/or Column of a Matrix	

	Concatenation along a Dimension Logical Operations on Arrays Automatic Generation of Vectors Linearly Spaced Vectors Logarithmically Spaced Vectors Matrix Manipulations Scaling a Matrix Reshaping a Matrix Special Matrices Upper and Lower Triangular Matrices Ones and Zeros Matrices Diagonal Matrices Special Matrices Mathematical Matrix Operations Dot Products Cross Products	
Chapter 4	Plotting	
	Introduction 2D Plotting plot(x,y) plot2d(), plot2d2(), plot2d3(), and plot2d4() polarplot() Plotting Multiple Plots in the Same Graph Plotting Multiple Plots Separately 3D Plots	3
Chapter 5	Loops and clause	
	roduction Loops while Infinite Loops for if-elseif-else	3
Chapter 6	Function	3
	Function	
Chapter 7	Script	6
	Script	
Total duration of the Course in Hours		30

No. of Students attended : 34

Value Added Course Particulars - 2021- 2022

Name of the Department	Name of the Value Added Course	Course Code	Start and End Dates	Name of the Resource Person and Affiliation	Year of Offering	No. of Students enrolled for the course	No. of students completed the course
Mechanical Engineering	Scilab for beginners	-	21.09.2021 to 25.05.2021	Dr.K.L. Narasimhamu Dr. N.Manikandan Mr. S.Praveen kumar	2021	34	34

List of Students Participated

S.No.	Name of the student	Roll No.	Class and Semester
1	ANGAJALA VAMSI	18121A0307	IV B.Tech I Semester
2	B PAVAN KUMAR	18121A0309	IV B.Tech I Semester
3	BANDARU NANDIVARDHAN	18121A0310	IV B.Tech I Semester
4	BEDUDURI SAJID BASHA	18121A0316	IV B.Tech I Semester
5	BETHAPUDI TEJESWAR	18121A0317	IV B.Tech I Semester
6	C HARSHA VARDHAN REDDY	18121A0322	IV B.Tech I Semester
7	CHITTA DEEKSHITH	18121A0330	IV B.Tech I Semester
8	CHUKKALA KRANTHIKUMAR	18121A0331	IV B.Tech I Semester
9	GANGULA VENKATA SASINATH	18121A0347	IV B.Tech I Semester
10	GONGALREDDY PRASANTH	18121A0350	IV B.Tech I Semester
11	KAKARLABYREDDY SARATH	18121A0363	IV B.Tech I Semester
12	KUNTA LOKESH	18121A0374	IV B.Tech I Semester
13	MOPURI JAGADISHWAR REDDY	18121A0384	IV B.Tech I Semester
14	NAGIRIMADUGHU PRUDHVI	18121A0391	IV B.Tech I Semester
15	NANDYALA VISHWA TEJA	18121A0393	IV B.Tech I Semester
16	P VINODH KUMAR	18121A03A3	IV B.Tech I Semester
17	PULIKAL MANOHAR	18121A03B9	IV B.Tech I Semester
18	RAAVI SRISAI TARUN	18121A03C0	IV B.Tech I Semester
19	SHAIK NAWAAZ	18121A03C8	IV B.Tech I Semester
20	SIVALINGAM CHARAN TEJA	18121A03D0	IV B.Tech I Semester
21	SYED SHAHID	18121A03D3	IV B.Tech I Semester
22	TALARI NANDA KISHORE	18121A03D4	IV B.Tech I Semester
23	THUMMA NAVEEN KUMAR	18121A03D8	IV B.Tech I Semester
24	VETTI VAMSI KRISHNA	18121A03E6	IV B.Tech I Semester
25	YADAM BHANU KUMAR	18121A03E9	IV B.Tech I Semester
26	GAURAV RAJ BASNET	18121A03F3	IV B.Tech I Semester
27	PRAMOD KUMAR SAH	18121A03F5	IV B.Tech I Semester
28	KOLLA BABU PRASAD	19125A0316	IV B.Tech I Semester
29	G JYOTHIPRASAD	19125A0310	IV B.Tech I Semester
30	KURUVA GOVARDHAN	19125A0319	IV B.Tech I Semester
31	NADENDLA SREE HARSHA	19125A0328	IV B.Tech I Semester
32	PACHARLA VISHNU VARDHAN	19125A0331	IV B.Tech I Semester
33	CHALLAGUNDLA MUNI SAI UMA	17121A0319	IV B.Tech I Semester
34	GUJJALA SIVA KRISHNA	17121A0338	IV B.Tech I Semester


About the resource person

Dr.K.L.Narasimhamu

Dr. K.L. Narasimhamu in B.Tech Mechanical Engineering from Sri Venkateswara University, Tirupati, Andhra Pradesh, India in the year 1999 and Post-Graduation in M.Tech in Production and Industrial Systems Engineering from Indian Institute of Technology Roorkee, Roorkee, India in the year 2001. He received his Ph.D. from Jawaharlal Nehru Technological University Anantapur, Anantapuramu, Andhra Pradesh, India in the year 2017. Currently, he is working as Professor, Department of Mechanical Engineering, Sree Vidyanikethan Engineering College, Tirupati, Andhra Pradesh, India. He has got 20 years of teaching experience. His research area of interest includes Micromachining, Optimization. He is having rich teaching experience in the subjects: Operations Research, Finite Element Method, Engineering Mechanics, Kinematics of Machinery, Dynamics of Machinery, Machine Drawing, Industrial Engineering & Management, Automation in Manufacturing, Unconventional Machining Process, Engineering Drawing, Thermal Engineering, Heat Transfer. He is a professional member in Life Member of Indian Society for Technical Education (MISTE).




BIO-DATA

1.	Name of Teaching Staff*	Dr. N.MANIKANDAN				
	2.	Designation	ASSOCIATE PROFESSOR			
	3.	Department	MECHANICAL ENGINEERING			
	4.	Date of Joining the Institution	06-02-2017			
5.	Qualifications with Class/Grade		DIPLOMA	UG	PG	Ph.D
		Degree	D.M.E	B.Tech	M.Tech.	Ph.D
		Class/Grade	1 st Class with Honours	1 st Class	1 st Class	-
6.	Total Experience in Years	Teaching	Industry	Research		
		9 Years 6 Months	1 Year	5 Years 6 Months		
7.	Papers Published	National		International		
		06		55		
8.	Papers Presented in Conferences	National		International		
		11		35		
9.	Ph.D Guide? Give field & University	Field : Manufacturing Engineering		University : ---		
10.	Ph.Ds/Projects Guided	PhD's : Nil		Projects at Masters Level : 00		
11.	Books Published/IPRs/Patents	Book Chapters – 10, Patents (Design & Utility) - 09				
12.	Professional Memberships	03				
13.	Consultancy Activities	Nil				
14.	Awards	Outstanding Reviewer Award from Elsevier				
15.	Grants fetched	Nil				
16.	Interaction with Professional Institutions	Nil				

Signature of the faculty

BIO-DATA

1.	Name of Teaching Staff*	S.PRAVEEN KUMAR			
2.	Designation	ASSISTANT PROFESSOR			
3.	Department	MECHANICAL ENGINEERING			
4.	Date of Joining the Institution	21-11-2019			
5.	Qualifications with Class/Grade		UG	PG	Ph.D
		Degree	B.Tech.	M.E	pursuing
		Class/Grade	First class	First class	--
6.	Total Experience in Years	Teaching	Industry	Research	
		11 years	1 years	--	
7.	Papers Published	National		International	
		04		00	
8.	Papers Presented in Conferences	National		International	
		00		07	
9.	Ph.D Guide? Give field & University	Field : Nil		University : Nil	
10.	Ph.Ds/Projects Guided	PhDs : Nil		Projects at Masters Level : Nil	
11.	Books Published/IPRs/Patents	Nil			
12.	Professional Memberships	02			
13.	Consultancy Activities	Nil			
14.	Awards	Nil			
15.	Grants fetched	Nil			
16.	Interaction with Professional Institutions	Nil			

Signature of the faculty

Department: ME |Date: 21st September to 25th September, 2021

A Value Added Course on
“SCILAB FOR BEGINNERS”
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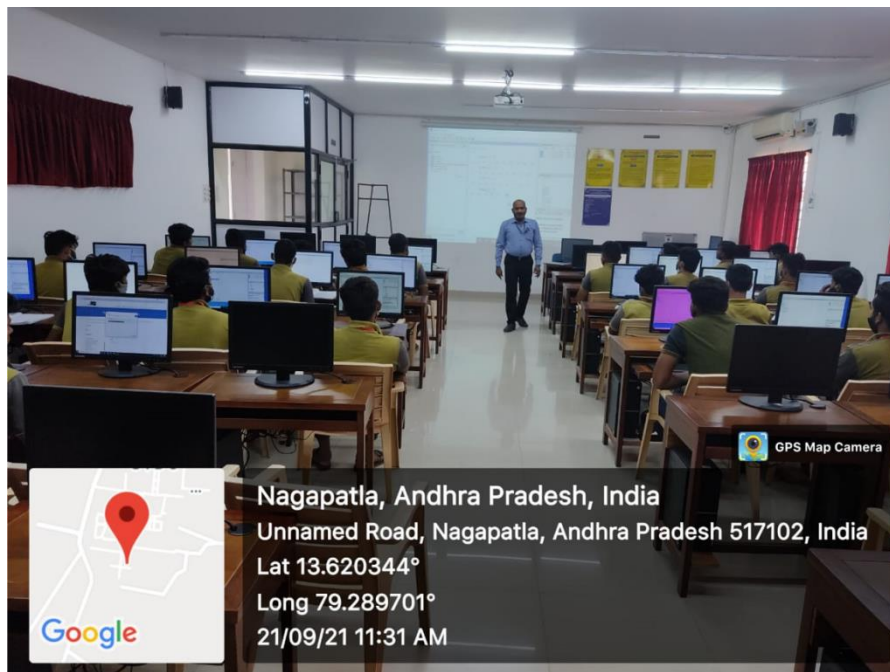
About the course:

SCILAB is free and open-source software for numerical computation providing a powerful computing environment for engineering and scientific applications. SCILAB has main features that enable the users interact more easily with SCILAB. They include optimization, statistics, simulation, 2-D and 3-D visualization. IIT Bombay is providing facility to participate in 'Text Book Companion project'. Students can apply SCILAB code to solve numerical problems in the subjects of curriculum. In this context, Department of Mechanical Engineering conducted Value Added Course on "SCILAB for beginners" from 21.09.2021 to 25.09.2021.

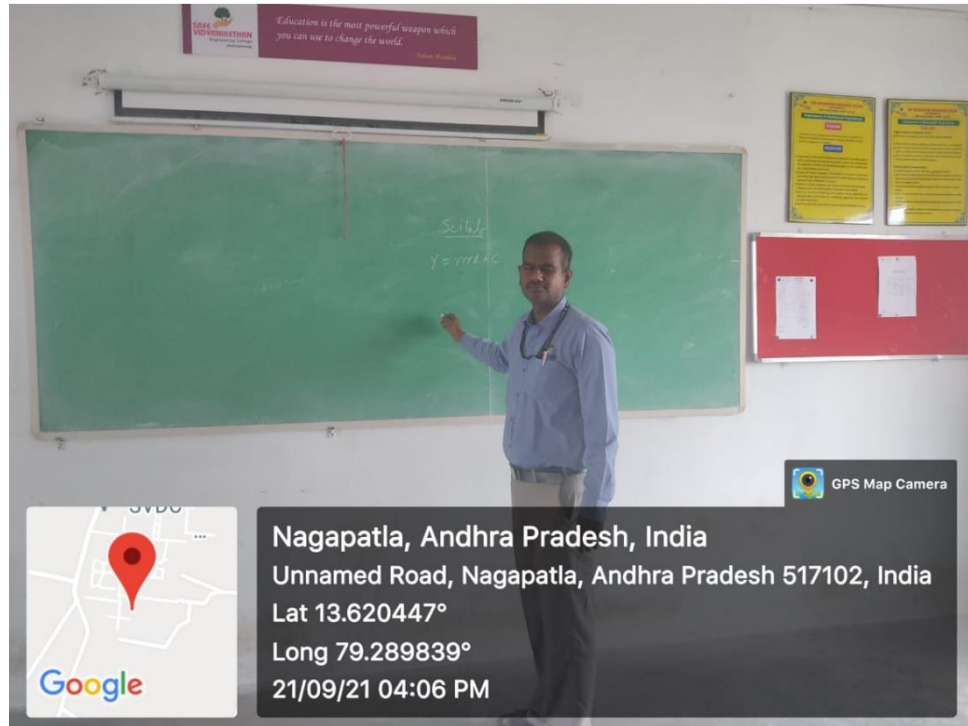
Resource persons:

1. Dr. K. L. Narasimhamu, Professor, Dept. of ME, SVEC.
2. Dr. N. Manikandan, Asso. Professor, Dept. of ME, SVEC.
3. Mr. S. Praveen kumar, Asst. Professor, Dept. of ME, SVEC.

Session1: (21.09.2021 FN)



Session 2: (21.09.2021 AN)



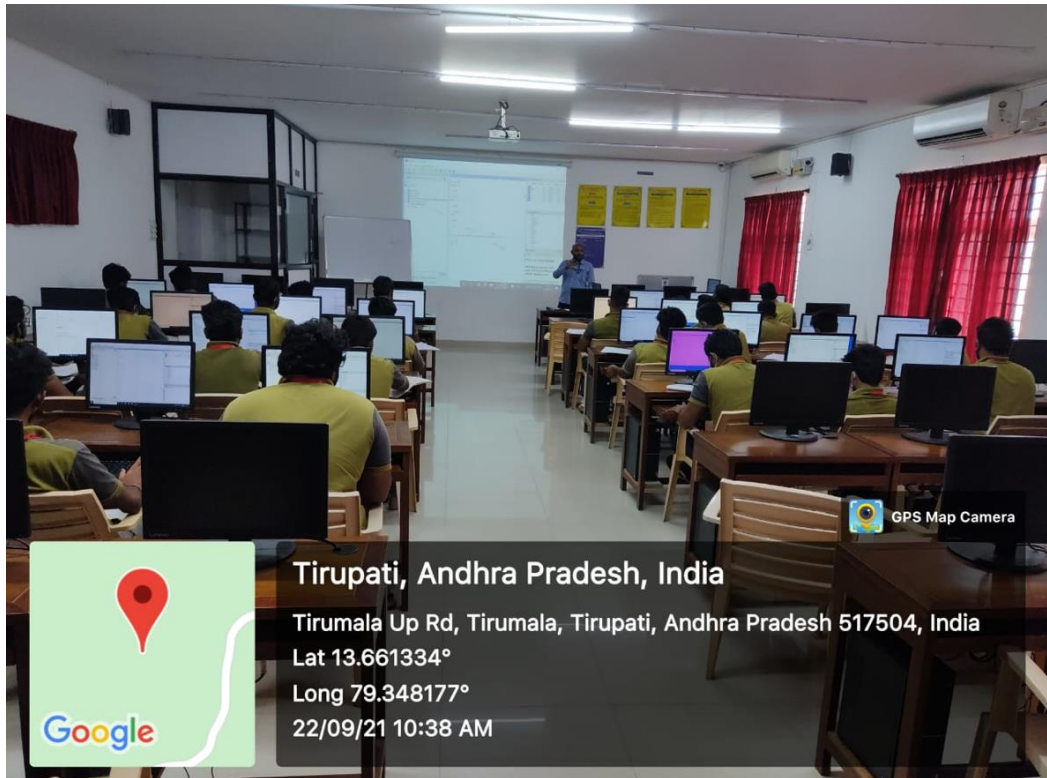
Topic Discussed: Session 1

- Introduction to Numerical Computing
- Various Software Alternatives
- History
- Installation
- Workspace
- Command Prompt
- Variable Browser
- SciNotes

Topic Discussed: Session 2

- Working with Scilab
- Working with Scilab Files
- Formatting Command Prompt
- Display
- Operator Precedence
- Variable Browser Window
- Clearing Variables
- Comments
- Predefined Constants

Session 3: (22.09.2021 FN)



Topic Discussed: Session 3

Variable

Assignment Operator =

Naming Conventions for Variables

Global and Local Variables

List of Variables

Data Types

Numerical Data

How to Store Floating Point Numbers

Formatted Display of Numbers

Boolean Data

Strings

Session 4: (22.09.2021 AN)



Topic Discussed: Session 4

- Introduction
- Arrays and Vectors
- Operations on Arrays and Vectors
- Elementwise Operations
- Matrix Multiplication
- Inverse of Matrices
- det()
- rank()
- trace()
- meshgrid
- ndgrid
- Magnitude of a Vector
- Random Matrix
- Using Indices to Make New Vectors Slicing
- Appending Rows and Columns
- Deleting a Row and/or Column of a Matrix

Session 5: (23.09.2021 FN)



Topic Discussed: Session 5

- Concatenation along a Dimension
- Logical Operations on Arrays
- Automatic Generation of Vectors
- Linearly Spaced Vectors
- Logarithmically Spaced Vectors
- Matrix Manipulations
- Scaling a Matrix
- Reshaping a Matrix
- Special Matrices
- Upper and Lower Triangular Matrices
- Ones and Zeros Matrices
- Diagonal Matrices
- Special Matrices
- Mathematical Matrix Operations
- Dot Products
- Cross Products

Session 6: (23.09.2021 AN)



Topic Discussed: Session 6

Plotting

Introduction

2D Plotting

plot(x,y)

plot2d(), plot2d2(), plot2d3(), and plot2d4()

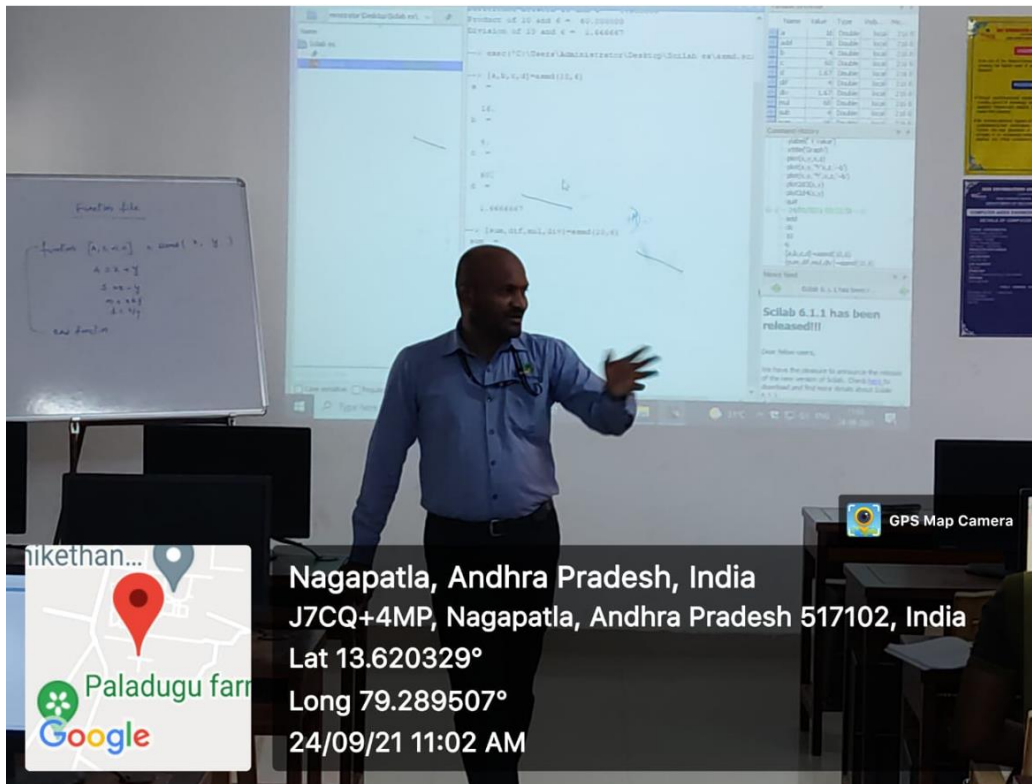
polarplot()

Plotting Multiple Plots in the Same Graph

Plotting Multiple Plots Separately

3D Plots

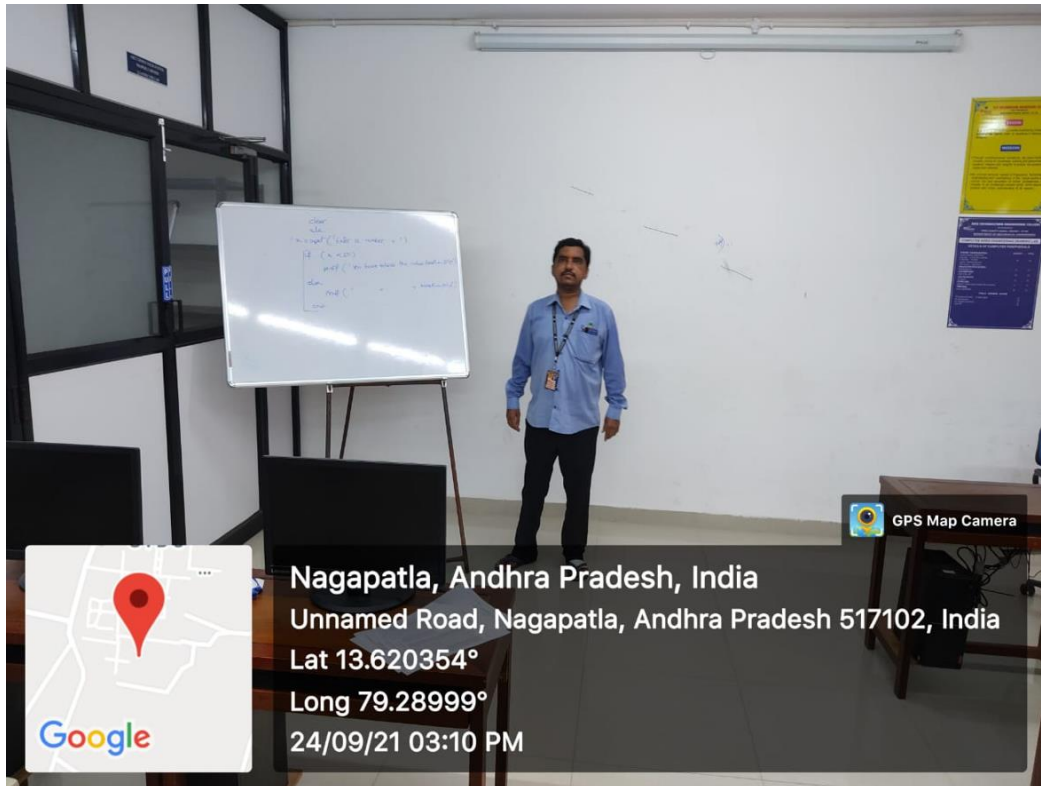
Session 7: (24.09.2021 FN)



Topic Discussed: Session 7

- Loops and clause
- roduction
- Loops
- while
- Infinite Loops
- for
- if-elseif-else

Session 8: (24.09.2021 AN)



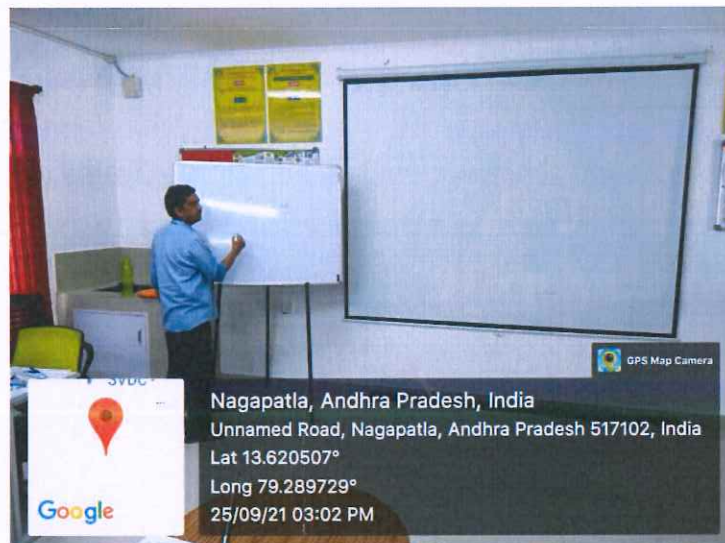
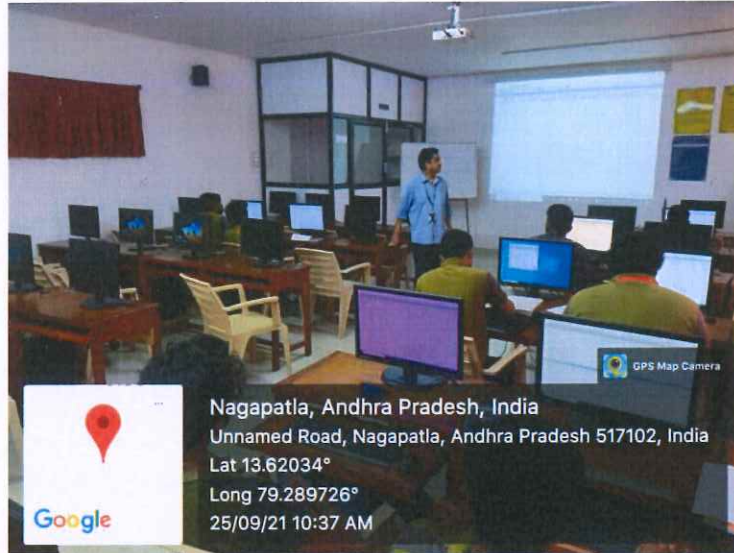
Topic Discussed: Session 8

Function

Syntax

Preparing function in SiNote

Session 9: (25.09.2021 FN)



Topic Discussed: Session 9 and 10

Scilab script in SciNote


Dr. B. SATYA MEHER
Professor & Head
Dept. of Mechanical Engineering
Sree Vidyanikethan Engineering College
TIRUPATI-517 102.



SREE VIDYANIKETHAN ENGINEERING COLLEGE

(AUTONOMOUS)

Sree Sainath Nagar, A. Rangampet, Tirupati – 517 102


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CERTIFICATE OF PARTICIPATION

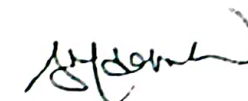
This is to certify that **Mr. BEDUDURI SAJID BASHA** has actively participated in a Value Added Course on “**SCILAB for Beginners**” held from 21-09-2021 to 25-09-2021 organized by Department of Mechanical Engineering , **Sree Vidyanikethan Engineering College (Autonomous)**, Sree Sainath Nagar, Tirupati.



Dr.K.L.Narasimhamu
Convener



Dr. R.Satya Meher
Professor & Head
Dept. of ME



Dr. B.M.Satish
Principal, SVEC

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(AUTONOMOUS)



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CERTIFICATE OF PARTICIPATION


This is to certify that **Mr. NAGIRIMADUGHU PRUDHVI REDDY** has actively participated in a Value Added Course on “**SCILAB for Beginners**” held from 21-09-2021 to 25-09-2021 organized by Department of Mechanical Engineering , **Sree Vidyanikethan Engineering College (Autonomous)**, Sree Sainath Nagar, Tirupati.



Dr.K.L.Narasimhamu
Convener



Dr. R.Satya Meher
Professor & Head
Dept. of ME



Dr. B.M.Satish
Principal, SVEC

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(AUTONOMOUS)



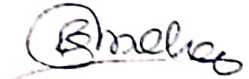
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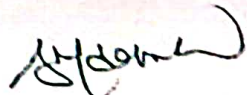
(Affiliated to JNTUA Anantapuramu, Approved by AICTE, Accredited by NBA; NAAC with 'A' Grade)

CERTIFICATE OF PARTICIPATION

This is to certify that Mr. NANDYALA VISHWA TEJA has actively participated in a Value Added Course on “SCILAB for Beginners” held from 21-09-2021 to 25-09-2021 organized by Department of Mechanical Engineering , Sree Vidyanikethan Engineering College (Autonomous), Sree Sainath Nagar, Tirupati.


Dr.K.L.Narasimhamu
Convener


Dr. R.Satya Meher
Professor & Head
Dept. of ME


Dr. B.M.Satish
Principal, SVEC