

N. K. Orchid College of Engineering and Technology, Solapur
Two-week Students Internship Program
by
Electrical Engineering Department

Title:	“Two week Online Internship on MATLAB Tools and its Application”
Duration:	16 th Feb 2021 to 28 th Feb 2021
Mode:	Online sessions organised using Zoom
No. of Participants attended:	Total 26 students from S.E Electrical
Faculty Coordinators :	Prof.N.U.Gawali and Prof.D.D.Pawar

About the Internship

Two-week Online Internship on MATLAB Tools and its Application” was arranged by electrical Department for SE students from 16th Feb 2021 to 28th Feb 2021 under the co-curricular activity program. Total 26 students were actively participated in this Internship. A brief summary of workshop is given as follows.

Researchers in engineering and science require platforms that let them explore and express new ideas, solve difficult problems, and create tools, leveraging a robust and flexible computational foundation.

MATLAB and Simulink are widely used across industries for research and product development, so researchers can apply their research to interesting and challenging real-world examples. MATLAB (MATrix LABoratory) is a multi-paradigm numerical computing environment and proprietary programming language developed by MathWorks.

MATLAB allows matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs written in other languages, including C, C++, C#, Java, Fortran and Python.

MATLAB (MATrix LABoratory) is a metaparadigm numerical computing environment and proprietary programming language developed by MathWorks. The Training program on MATLAB will provide an excellent opportunity to exchange ideas on the topics of importance along with thought-provoking technical sessions

Objective of Internship

- 1) Understanding the MATLAB environment
- 2) Being able to do simple calculations using MATLAB
- 3) Being able to carry out simple numerical computations and analyses using MATLAB
- 4) The primary objectives of this MATLAB Tools and its Application Internship was to improve student's IT/Programming Logic skills and thus improves their employment potential. Electrical students specially get benefit of this software to work on Industry.
- 5) The Internship aims at deliberation, sharing knowledge to the target audience about the significance of MATLAB Tools and its application and present current research opportunities in this field.
- 6) The participants will learn about matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs written in other languages.

Upon successful completion of this Internship, the student should be able to:

- 1) Understand the main features of the MATLAB development environment
- 2) Use the MATLAB GUI effectively
- 3) Design simple algorithms to solve problems
- 4) Write simple programs in MATLAB to solve scientific and mathematical problems
- 5) Know where to find help

Course Content

- Introduction to MATLAB
- Working with Matrices
- Expressions
- Relational and Logical Operations
- Complex and Statistical Functions
- Input / Output of Variables
- Plotting Function
- Flow Control
- MATLAB Simulink Basic
- Applications of MATLAB in Power Electronics and Machine Drive
- Applications of MATLAB in Power and Control System

Workshop Details:

- Two-week Online Internship on **“MATLAB Tools and its Application”** for SE Students was conducted from 16th Feb 2021 to 28th Feb 2021.
- Workshop was conducted through Online Platform and MATLAB Programming and different tools was taught using MATLAB software.
- In the workshop sessions, step-by-step development of MATLAB code for industrial applications were demonstrated.
- MATLAB Programming tasks were given to the students after demonstration sessions in order to have a learning experience.
- Valedictory session was conducted on 28/02/2021 in which the students gave demonstration of programs they developed and feedback of their overall learning experience. The department initiatives were shared by Prof. V.S. Shirwal (H.O.D Electrical) for all the participants.
- E-Certificates were provided to the students after completion of the workshop and feedback process.
- The entire course was planned, coordinated by Prof.N.U. Gawali & Prof.D. D. Pawar along with a strong support from entire Electrical Department.

Glimpse of Online “MATLAB Tools and its Application” Internship

The screenshot displays a Zoom meeting interface. At the top, a status bar indicates 'You are viewing Prof. D.D. Pawar's screen'. Below this, a row of participant names is visible: SACHIN KORE, Dinesh Pawar, 08 Pratik Han..., 19 Vivek Sutar, and 4.Abhishek Des... The main window shows the MATLAB 7.9.0 (R2009b) environment. The Command Window contains the following code and output:

```
>> A=4+9i  
  
A =  
4.0000 + 9.0000i  
  
>> x=real(A);  
>> y=imag(A);  
>> A=y+x*i  
  
A =  
9.0000 + 4.0000i  
  
A >> |
```

On the right side of the Zoom window, a list of 23 participants is shown, each with a unique icon and name. The bottom toolbar includes buttons for 'Join Audio', 'Start Video', 'Participants', 'Chat', 'Share Screen', 'Record', 'Reactions', and 'Leave'. The system clock at the bottom right shows 11:19 on 23-02-2021.

Zoom Meeting

You are viewing Prof. A. J. Mehta's screen

View Options

Nitin Gawali Prof. A. J. Mehta 7_anjali sonawa... 22-Meghraj Wa... 11-Taha Kar...

Participants (22)

Find a participant

- 11- Taha Karbhari
- 13 LokareVaishnavi
- 15 Shrutika Mathapati
- 15 mauli waghmare
- 18-suryawanshi Vaishnavi
- 1-LALCHAND Bandagi
- 20tadkase
- 22-Meghraj Waghmare
- 23_RITESH WAGHMARE
- 24.Sudhir Patil
- 25_Shahfaroze Shaikh
- 4.Abhishek Deshmukh
- 7A_anjali sonawane
- NG Nikhil Gaikwad
- PC Prathviraj Choudhari
- Sachin Kore

Expressions

- Variable $a=4, b=56...$ etc...
- Numbers 4, -56, 0.00025, 9.4526, $1.24e-12$, 5.89e23, 2j, $5+4i$
- Operators $+ - * ^$
- Functions sqrt, abs, sin, cos, etc

$$\left((1 + \sqrt{10}) + 3 \right) / 2 =$$

Click to join audio

Join Audio Start Video Participants Chat Share Screen Record Reactions Leave Invite

Type here to search

10:52 18-02-2021

Recording

You are viewing Prasad Patil's screen

Prasad Patil is talking...

View Options

21 Adivesh Vinc... 08 Pratik Hana... 11-Taha Kar...

14_Shrutika Mat... 4.Abhishek Des... 18-suryawanshi...

7_anjali sonawa... Prathviraj Chou... 25_Shahfaroze S...

09_Yash Jadhav 13 LokareVaishn... 15 mauli.wag...

06-Rushikesh... 19 Vivek Sutar Nikhil Gaikwad

Moin sayyed 12 Mahesh Kore 05 tukaram dhale

Lalchand Ban... 23_RITESH WAG... 2-Binise Sarang

Click to join audio

Join Audio Start Video Participants Chat Share Screen Record Reactions Leave

Type here to search

10:56 27-02-2021

You are viewing Samruddhi Shaha's screen

12:00

The shared content is fit to your screen. To see the original size, click "Original size" in the menu.

```
>> A=[1 2 3;4 5 6;7 8 9]
>> A=[1 2 3;4 5 6;7 8 9]
A =
     1     2     3
     4     5     6
     7     8     9
>> A(1,4)
Index in position 2 exceeds array bounds
(must not exceed 3).
```

```
>> A(1,2)
ans =
     2
>> B=[4 6 3; 12 16 3; 7 18 5]
B =
     4     6     3
    12    16     3
     7    18     5
>>
```

Click to join audio

Join Audio Start Video

Participants 26 Chat Share Screen Record Reactions

Leave

Zoom Meeting

You are viewing Samruddhi Shaha's screen

View Options

Nitin Gawali

Samruddhi Shaha

4.Abhishek Des...

25_Shahfaroz S...

7_anjali sonawa...

06-Rushikesh...

12:04 PM

History

- ☐ x(3:1,3;2,3:3)=b
- ☐ x(3,1:3)=b
- ☐ clc
- ☐ b=[2 4 5]
- ☐ x(3,1:3)=b

17-FEB-2021 11:25 AM

- ☐ A=[1 2 3;4 5 6;7 8 9]
- ☐ A=[1 2 3;4 5 6;7 8 9]
- ☐ A(1,4)
- ☐ A(1,2)
- ☐ B=[4 6 3; 12 16 3; 7 18 5]
- ☐ B(3,2)
- ☐ B(2,3)+B(1,3)
- ☐ clc

Click to join audio

Join Audio Start Video

Participants 26 Chat Share Screen Record Reactions

Leave

5

Zoom Meeting | You are viewing Santosh Kumar's screen | View Options

Participants (24)

Find a participant

- NG Nitin Gawali (Me)
- V Santosh Kumar (Host)
- OT 05 tukaram dhale
- 06-Rushikesh Shinde
- P 08 Pratik Hanamgaon
- 1- Lalchand Bandagi
- 11- Taha Karbhari
- 1K 12 kore mahesh
- 1 13LokareVaishnavi
- 15 14 Shrutika Mathapati
- 15 mauli waghmare
- 1V 18-suryawanshi Vaishnavi
- 1V 19 Vivek Sutar
- 2 20tadkase

Click to join audio

Join Audio | Start Video | Participants | Chat | Share Screen | Record | Reactions | Leave

MATLAB 7.6.0 (R2009a)

Workspace

Name	Value	Size	Class
aaa	[1,2,3]	1x3	double
bbb	3	1x1	double

Command Window

```
>> aaa = [1,2,3]
aaa =
     1     2     3
>>
```

Command History

```
plot(t, 'DisplayFormat', 'r', 'LineStyle', 'solid');
Fs = 2000;
T = 1/Fs;
L = 500;
t = (0:L-1)*T;
disp(t)
Fs*(1:100)
-- 8/15/20 7:43 AM --
t = 0/15/20 8:44 AM --
aaa = [1,2,3]
```

MATLAB will prompt you to enter the variable name.



Zoom Meeting | You are viewing Santosh Kumar's screen | View Options

Participants (24)

Find a participant

- 15 mauli waghmare
- 1V 18-suryawanshi Vaishnavi
- 1V 19 Vivek Sutar
- 2 20tadkase
- 2W 22-Meghraj Waghmare
- 2W 23_RITESH WAGHMARE
- 2P 24.Sudhir Patil
- 2S 25_ Shahfaroz Shaikh
- 2-Bhise Sarang
- 4D 4.Abhishek Deshmukh
- 7A 7_ anjali sonawane
- NG Nikhil Gaikwad
- PC Prathviraj Choudhari
- V Santosh Kumar

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MATLAB 7.6.0 (R2009a)

Workspace

Name	Value	Size	Class
aaa	[1,2,3]	1x3	double
bbb	3	1x1	double

Command Window

```
>> aaa = [1,2,3]
aaa =
     1     2     3
>> bbb = 3;
>>
```

Command History

```
Fs = 2000;
T = 1/Fs;
L = 500;
t = (0:L-1)*T;
disp(t)
Fs*(1:100)
-- 8/15/20 7:43 AM --
t = 0/15/20 8:44 AM --
aaa = [1,2,3]
bbb = 3;
```

2) Or by double clicking on bbb.

To assign a value to bbb, you can do it in two ways: 1) Using the command window.

