Sri Venkateswara College of Engineering

Department of Mechanical Engineering

A Reflection Report

Five days

On

Operation and Programming of Industrial Robot

Organized by

Department of Mechanical Engineering

Date: 23.05.2022 & 27.05.2022

Time: 8.30 am to 3.30 pm

Co-ordinators

Mr. A. Kumaraswamy, AP/MECH

Mr. M. Arulkumar AP/MECH

Mr. Joe Johnson AP/MECH

Conveners

Dr. S. Ramesh Babu, HoD/MECH

Dr. M. Mohandass, AHoD, ASP/MECH

SVCE | Sri Venkateswara College of Engineering

INSTITUTION'S INNOVATION COUNCIL (Ministry of HRD Initiative)

Five day Faculty Development Program on

Operation and Programming of Industrial Robot

Resource Persons

Dr. K. S. Badrinathan
Dr. M. Mohandass
Mr. A. Kumaraswamy
Mr. M. Arul Kumar
Mr. Joe Johnson
Dept. of Mechanical Engineering, SVCE.

Date
23rd to 27th May, 2022

Venue (Physical Mode)
Mechatronics Lab, Dept. Of Mechanical Engineering, SVCE

Registration link:
https://forms.gle/5w2mZEncBaX1nntt8

Organized by
Department of Mechanical Engineering, SVCE

MELFA
Vertical Type Robot
RV-CR series
Slim and Compact Robot Arm
e-F@ctory
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SVCE
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Coordinators

Mr. A. Kumaraswamy, AP/MEC
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Conveners

Dr. S. Ramesh Babu, HoD/MEC
Dr. M.Mohandass, AHoD/MEC

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Pennalur, Sriperumbudur (TK) – 602117

DEPARTMENT OF MECHANICAL ENGINEERING

Solicit your esteemed presence for the

INAUGURAL FUNCTION

Of

Five Day Faculty Development Program on

Operation and Programming of Industrial Robot

Inaugural Address by

Dr. R. Ramesh
Professor & Dean Academics
Sri Venkateswara College of Engineering

Presided by

Dr. S. Ramesh Babu
Professor & Head
Department of Mechanical Engineering
Sri Venkateswara College of Engineering

Venue   :   Room No:4201 , MEC Dept.

Date   :   23rd May 2022

Timing   :   9.30 a.m to 10.00 a.m

Report on the Event

About the program:

A five day faculty development programme on Operation and Programming of Industrial Robot was conducted in the department of mechanical engineering. It is aimed to furnish the knowledge on programming and operation of the six axis robot, which enables the trainees to work under industrial environment. The target audience was internal faculty members and technical personnel who can share the knowledge to the future prospects. Total numbers of participants were limited to 20 members.

DAY – 01:

Session:01

A five day faculty development programme on Operation and Programming of Industrial Robot was inaugurated by Dr. R. Ramesh Dean Academics, along with Dr. S. Ramesh Babu, HOD/MECH and Dr. M. Mohandass AHOD/MECH & Convener of this FDP are also addressed the participants.

Followed by Dr.K.S.Badrinathan has delivered the lecture on introduction to robots. To impart basic ideas on robots and its components used in robot development.

Session: 02

Industrial robot configurations and specifications of Mitsubishi 6 DOF was delivered by Mr. M. Arulkumar, Assistant Professor, Department of Mechanical Engineering.

Session: 03

Mr. Joe Johnson Assistant Professor, Department of Mechanical Engineering teaches the basics about robot operation using teach pendant hand on session through Mitsubishi 6 DOF robot.

Day 02:

Session: 04

Topic of Transformation matrix and forward & inverse kinematics was delivered by Mr. A. Kumaraswamy Assistant Professor, Department of Mechanical Engineering.

Session: 05

Hand on Session through robot analyzer for robot programming delivered by Mr. Joe Johnson Assistant Professor, Department of Mechanical Engineering. Followed by introduction to RT-ToolBox3 concept of offline/online/simulation through power point presentation.

Day: 03, 04 & 05

Hands on Sessions on the following topics were handled by Dr. M. Mohandass Assistant HOD/Associate Professor, and Mr. Joe Johnson, Assistant professor, Department of Mechanical Engineering.

- ❖ Introduction to MELFA programming language and commands.
- ❖ Simulated robot programming and operations
- ❖ Programming using linear interpolation
- ❖ Programming using circular interpolation
- ❖ Conditional loop IF statement
- ❖ Conditional loop FOR statement
- ❖ Programming for pick place using TCP
- ❖ Programming for pick place using pallet commands.

Valedictory of five day faculty development programme on Operation and Programming of Industrial Robot was facilitated by Dr. K.S. Badrianthan Dean Educational Development along with Dr. S. Ramesh Babu, HOD/MECH and Dr. M. Mohandass AHOD/MECH & Convener of this FDP are also presented. Followed by participation certificate distributed through Mitsubishi 6 DOF robot.

DAY-3 – 25/05/2022

Session	Topic	Team	Timing	Resource Person
		Fore Noon		
1	Introduction to robot operation	All	9.30 am - 10.30 am	Mr. Joe Johnson
2	Robot programming using linear interpolation command	1	10.30 am - 11.00 am	Dr. M. Mohandass & Mr. Joe Johnson
		2	11.00 am - 11.30 am	
		3	11.30 am - 12.00 Noon	
		4	12.00 Noon - 12.30 pm	
		After Noon		
3	Robot programming using circular interpolation command	1	1.30 pm - 2.00 pm	Dr. M. Mohandass & Mr. Joe Johnson
		2	2.00 pm- 2.30 pm	
		3	2.30 pm - 3.00 pm	
		4	3.00 pm - 3.30 pm	

DAY-4 – 26/05/2022

Sl.No	Topic	Team	Timing	Resource Person
		Fore Noon		
1	Conditional loop using IF statement	1	9.30 am - 10.00 am	Dr. M. Mohandass & Mr. Joe Johnson
		2	10.00 am - 10.30 am	
		3	10.30 am - 11.00 am	
		4	11.00 am - 11.30 am	
		After Noon		
2	Conditional loop using FOR loop statement	1	1.00 pm - 1.30 pm	Dr. M. Mohandass & Mr. Joe Johnson
		2	1.30 pm - 2.00 pm	
		3	2.00 pm - 2.30 pm	
		4	2.30 pm - 3.00 pm	

DAY-5 – 27/05/2022

Sl.No	Topic	Team	Timing	Resource Person
		Fore Noon		
1	Programming for Pick and Place with TCP	1	9.30 am - 10.00 am	Dr. M. Mohandass & Mr. Joe Johnson
		2	10.00 am - 10.30 am	
		3	10.30 am - 11.00 am	
		4	11.00 am - 11.30 am	
		After Noon		
2	Programming for Pick and Place by Pallet command	1	1.00 pm - 1.30 pm	Dr. M. Mohandass & Mr. Joe Johnson
		2	1.30 pm - 2.00 pm	
		3	2.00 pm - 2.30 pm	
		4	2.30 pm - 3.00 pm	

DAY-1 – 23/05/2022

Session	Topic	Team	Timing	Resource Person
		Fore Noon		
1	Introduction to Robotics	All	10.00 am - 11.00 am	Dr. K.S. Badrinathan & Dr. M. Mohandass
2	Industrial Robot Configurations & specifications of Mitsubishi 6DOF	All	11.00 am - 12.00 Noon	Mr. M. Arul Kumar
		After Noon		
3	Basics about robot operation using teach pendant - Hands-on	1	1.00 pm - 1.30 pm	Mr. Joe Johnson
		2	1.30 pm - 2.00 pm	
		3	2.00 pm - 2.30 pm	
		4	2.30 pm - 3.00 pm	

DAY-2 – 24/05/2022

Session	Topic	Team	Timing	Resource Person
		Fore Noon		
1	Transformation Matrix and Forward & Inverse Kinematics	All	9.30 am- 10.30 am	Mr. A. Kumaraswamy Mr. Joe Johnson
	Hands-on session on using Roboanalyzer	All	10.30 am- 11.00 am	
2	Introduction to RT-Toolbox3 Concept of Offline/Online/Simulation	All	11.00 am - 12.00 Noon	Mr. Joe Johnson
		After Noon		
3	Introduction to MELFA programming language and commands	All	12.00 Noon - 12.30 pm	Mr. Joe Johnson
4	Simulated robot programming and operation	All	1.30 pm - 2.30 pm	
5	Hands-on session on simulated programming.	1	2.30 pm - 2.45 pm	
		2	2.45 pm - 3.00 pm	
		3	3.00 pm - 3.15 pm	
		4	3.15 pm - 3.30 pm	

Five Day FDP on Operation and Programming of Industrial Robot
23/05/2022 – 27/05/2022

List of Team Members:

Team 1

SrNo	Email Address	NAME :	Designation	Department	Mobile #
1	anand@svce.ac.in	Dr. M.ANANDAN	Asso Prof	Marine Engg.	9443813896
2	vguru@svce.ac.in	Mr. GURUSAMY	Asso Prof	Marine Engg.	9994436427
3	mohan.a@svce.ac.in	Mr. MOHAN	Asst Prof	Marine Engg.	9566115653
4	jdhanabal@svce.ac.in	Mr. DHANABAL J	Asst Prof	Automobile Engg.	9841496037
5	rramesh@svce.ac.in	Mr. R RAMESH	Mechanic	Automobile Engg.	9962431349

Team 2

SrNo	Email Address	NAME :	Designation	Department	Mobile #
1	sgopi@svce.ac.in	Dr. S GOPINATH	Professor	Mechanical Engg	9445115107
2	jaya@svce.ac.in	Dr. JAYABHADURI	Asso Prof	Computer Science and Engineering	9444117480
3	ksuresh@svce.ac.in	Dr. SURESH.K	Asst Prof	Information Tech	9841222106
4	spananth@svce.ac.in	Mr. PREMANANTH	Instructor	Electrical and Electronics Engg.	9894496010
5	balakrishnann@svce.ac.in	Mr. BALAKRISHNAN	Instructor	Electrical and Electronics Engg.	9976582895

Team 3

SrNo	Email Address	NAME :	Designation	Department	Mobile #
1	natraj@svce.ac.in	Dr. S.Natarajan	Asso Prof	Mechanical Engg.	9994515856
2	mgaja@svce.ac.in	Dr. GAJENDIRAN	Asst Prof	Mechanical Engg.	9884546070
3	sridharan@svce.ac.in	Dr. SRIDHARAN	Asst Prof	Mechanical Engg.	9790567576
4	saravananms@svce.ac.in	Mr. SARAVANAN	Asst Prof	Mechanical Engg.	8643826047
5	jbaskaran@svce.ac.in	Mr. BASKARAN J	Instructor	Mechanical Engg.	9551341781

Team 4

SrNo	Email Address	NAME :	Designation	Department	Mobile #
1	ponnuvel@svce.ac.in	Dr. S. PONNUVEL	Asso Prof	Mechanical Engg.	8939329433
2	maheswaran@svce.ac.in	Mr. MAHESWARAN	Asst Prof	Mechanical Engg.	9894144658
3	kirubakaran@svce.ac.in	Mr. KIRUBAKARAN	Asst Prof	Mechanical Engg.	8903626901
4	ramprasadk@svce.ac.in	Mr. RAM PRASAD	Asst Prof	Mechanical Engg.	9566801941
5	nishal@svce.ac.in	Mr. NISHAL M	Asst Prof	Mechanical Engg.	9677120751

Inaugural Address by Dr. R. Ramesh, Prof/ Dean Academics

Lecture Delivered by Dr.K.S.Badrinathan Prof/Dean Educational Development.

Lecture Delivered by Dr. M. Mohandass Asso.Prof/AHoD.

Lecture Delivered by Mr. A. Kumaraswamy, Asst.Prof. and Coordinator of the FDP

Lecture Delivered by Mr. M. Arulkumar, Asst.Prof. and Coordinator of the FDP

Hands On session by Mr. Joe Johnson, Asst.Prof and Coordinator of the FDP

Hands on Session – Programmed by the Participants

Certificate distribution by Robot

Valedictory Address by Dr. R. Ramesh, Prof/Dean -Academics

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DEPARTMENT OF MECHANICAL ENGINEERING

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VALEDICTORY FUNCTION

Of

Five Day Faculty Development Program on

Operation and Programming of Industrial Robot

Valedictory Address by

Dr. K.S. BADRINATHAN
Professor & Dean Educational Development
Sri Venkateswara College of Engineering

Presided by

Dr. S. Ramesh Babu
Professor & Head
Department of Mechanical Engineering
Sri Venkateswara College of Engineering

Venue   :   Room No:4201 , MEC Dept.

Date   :   27th   May 2022

Timing   :   2.45 p.m to 03.15 p.m

Session: 01 (Dr. K.S. Badrinathan, Prof/Dean-ED) Topic: Introduction to Robotics

13 responses

Publish analytics

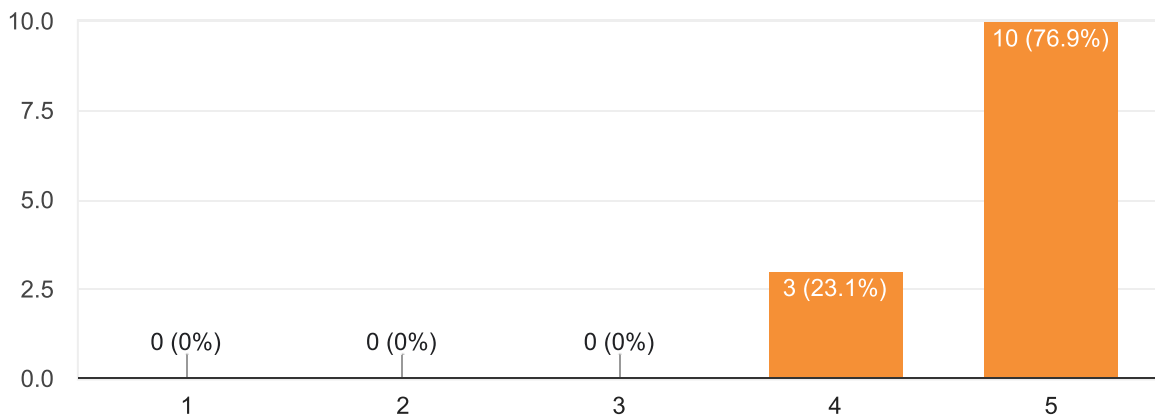## How satisfied were you with the Session?

Copy

13 responses
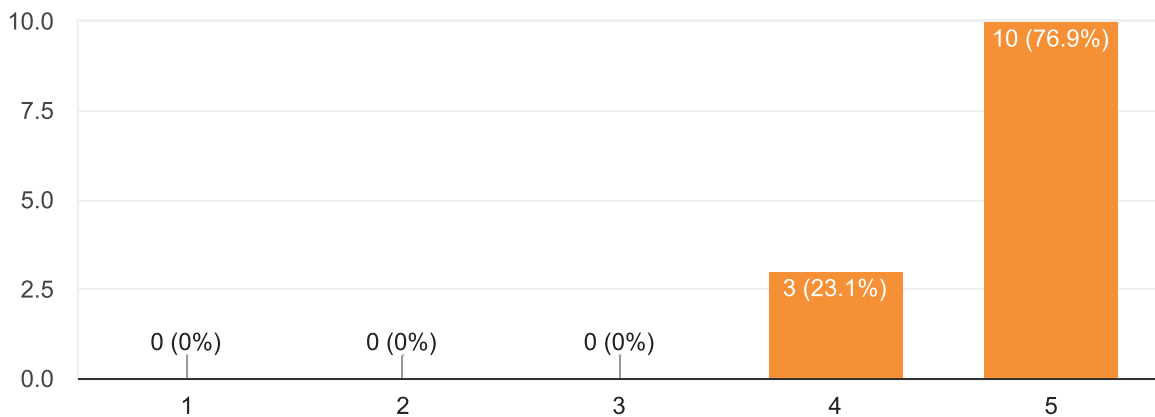
How relevant and helpful do you think it was related to the title of the FDP?
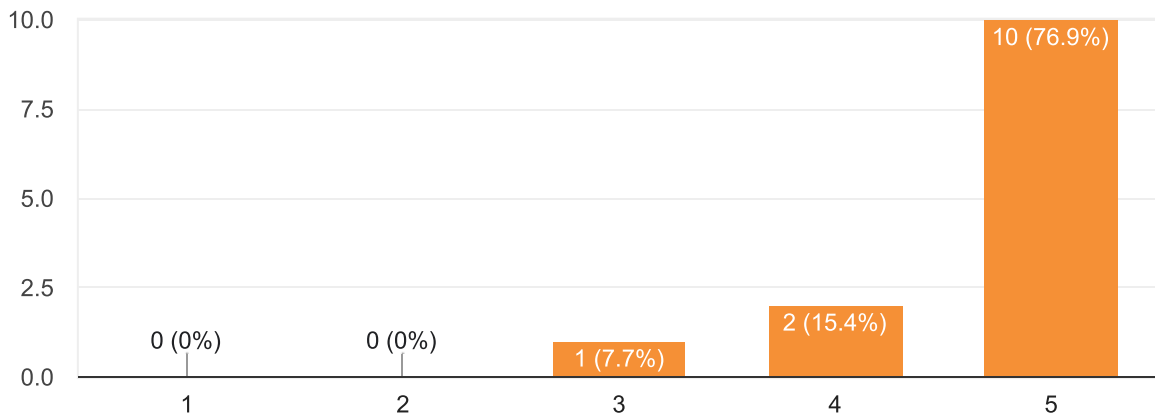
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13 responses

How satisfied were you with the session delivered by the expert member? ⧉ Copy

13 responses

What were your key take away from this session?

10 responses

Introduction to Robots

About robots

Application of Robot

Applications of robotics

difference between the robots and automation

-

Introduction to Robotics

Robotics - Introduction, Importance
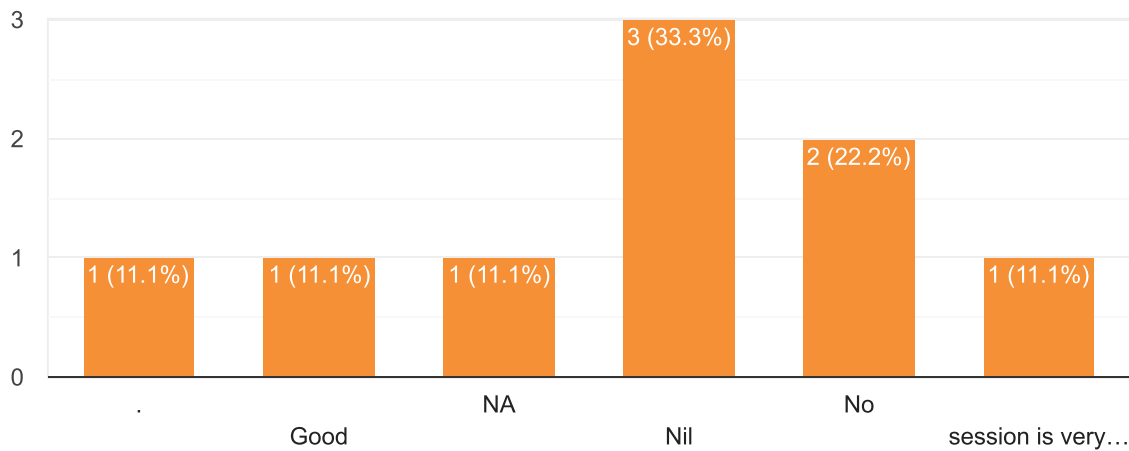
Good

Importance of robots

Any additional comments regarding this sessions?   Copy

9 responses

Name (optional)

10 responses

Dr.M.Anandan

N.BALAKRISHNAN

Maheswaran

J Baskaran

Mohan A

-

M.GAJENDIRAN

S.Natarajan

R RAMESH

Session: 03 (Mr. Joe Johnson, Asst. Prof) Topic: Basic about robot operation using teach pendant - Hands on
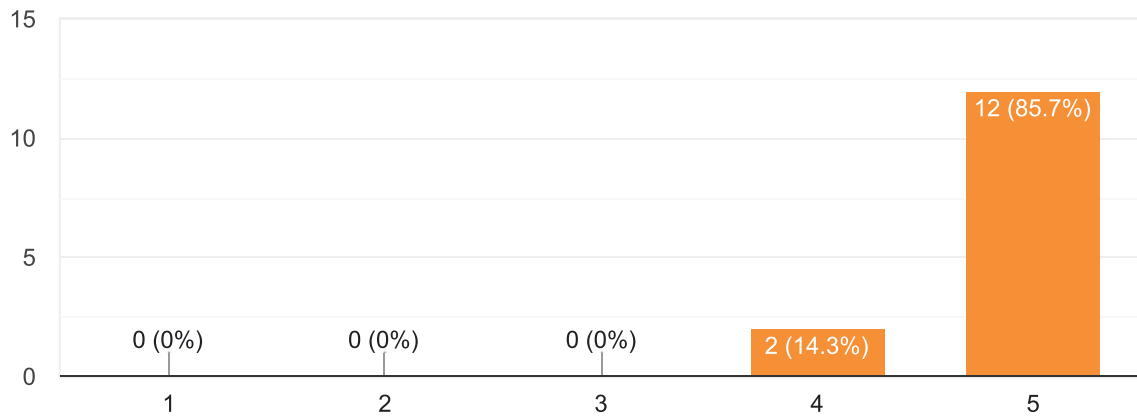
14 responses

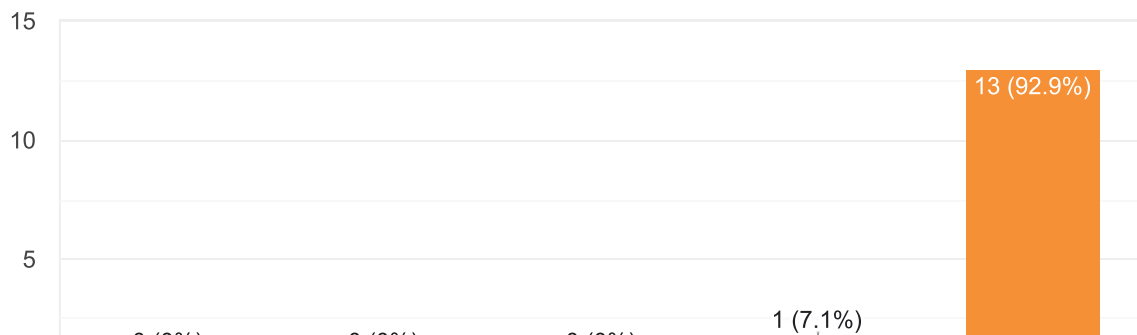Publish analytics

How satisfied were you with the Session?

14 responses   Copy

Bar chart:
- 1: 0 (0%)
- 2: 0 (0%)
- 3: 0 (0%)
- 4: 2 (14.3%)
- 5: 12 (85.7%)

How relevant and helpful do you think it was related to the title of the FDP?

14 responses   Copy

Bar chart:
- 13 (92.9%)
- 1 (7.1%)

0 (0%)   0 (0%)   0 (0%)

0
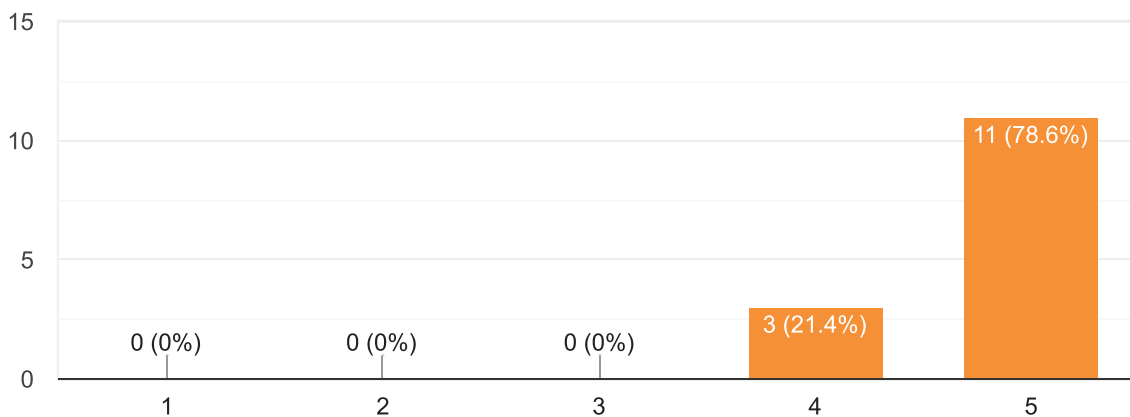   1   2   3   4   5

How satisfied were you with the session delivered by the expert member?   ⧉ Copy

14 responses

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15

10                                                      11 (78.6%)


 5
                                         3 (21.4%)

 0     0 (0%)    0 (0%)    0 (0%)
        1         2         3         4         5
```

What were your key take away from this session?

11 responses

Basic Robot operation

Basics about robot operation using
teach pendant

Control robot practice session

Programming with Teach pendant

how to approach the 6 axis robot with computer mitsu soft simulation. I it very easy to
understand i learn the same next day quickly with the manual shared by sir

-

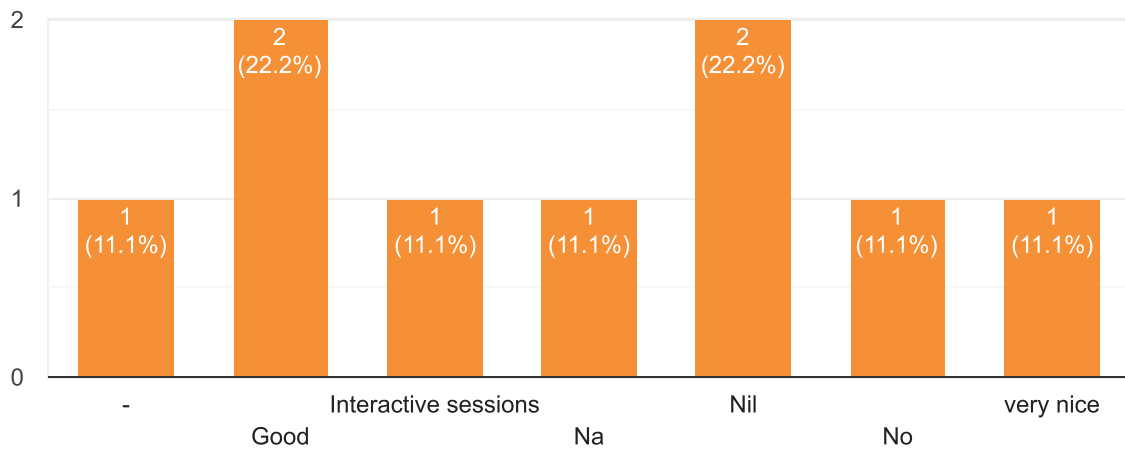LIVELY PRACITICAL EXPERINCE

Operation of robots

Good

Very good explanation

Basics about Robot

Any additional comments regarding this sessions?   ⧉ Copy

9 responses

| - | Good | Interactive sessions | Na | Nil | No | very nice |

Name (optional)

9 responses

N.BALAKRISHNAN

Mahewaran

J Baskaran

Mohan A

M.GAJENDIRAN

S.Natarajan

R RAMESH

Nishal M

J Sivaramapandian

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DEPARTMENT OF MECHANICAL ENGINEERING

Five day Faculty Development Programme on

Operation and Programming of Industrial Robot

CERTIFICATE OF PARTICIPATION

This is to certify that Mr./ Dr. / Ms. _____ from

Sri Venkateswara College of Engineering has participated in Five day Faculty Development Programme on

"Operation and Programming of Industrial Robot" organized by the department of Mechanical Engineering

during 23rd May 2022 to 27th May 2022.

(Dr.M.Mohandass)
Coordinator & AHoD
Dept.of Mechanical Engg.

(Dr.S.Ramesh Babu)
Professor & Head
Dept.of Mechanical Engg.

(Dr.S.Ganesh Vaidyanathan)
Principal
SVCE

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DEPARTMENT OF MECHANICAL ENGINEERING

Five day Faculty Development Programme on

Operation and Programming of Industrial Robot

CERTIFICATE OF APPRECIATION

This is presented to Mr./ Dr. _____ from

Sri Venkateswara College of Engineering for his valuable contribution in conducting Five day Faculty Development Programme on "Operation and Programming of Industrial Robot" organized by the department of Mechanical Engineering during 23rd May 2022 to 27th May 2022.

(Dr.M.Mohandass)
Coordinator & AHoD
Dept.of Mechanical Engg.

(Dr.S.Ramesh Babu)
Professor & Head
Dept.of Mechanical Engg.

(Dr.S.Ganesh Vaidyanathan)
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