SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Sindalagundu post, Dindigul-624 002, Tamilnadu. Ph: 0451-2448800
(Approved by AICTE, Affiliated to Anna University, Chennai Accredited by NAAC)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Technology Training Programme on Industrial Robotics

2022-23 (Even Semester) III & IV Year EEE

(06.03.2023 to 11.03.2023)

Trained by

Axis Global Automation, Coimbatore

From

Dr.G.MohanBabu,
Professor & Head,
Department of Electrical and Electronics Engineering,
SSM Institute of Engineering and Technology,
Dindigul-02

To
The Principal,
SSM Institute of Engineering and Technology,
Dindigul-02

Respected Sir,
Sub: Requesting Approval of conducting **Technological Teaching** for III and IV Year EEE Students-Reg

The **Department of EEE** has planned to conduct Technological Teaching for Third and Final year Students on "Industrial Robotics" which is scheduled in March 2023. The quotation details, syllabus and Training Schedule are attached with this letter. Kindly do the needful sir.

Technological Training	Name of the Company	Total No.of Students	No. of Hours	Duration	Amount	Coordinator/Faculty in Charges
Industrial Robotics	Axis Global Automation, Coimbatore	64	40	06.03.23 to 11.03.23	Rs.1,28,000	D.Manoj,A.P/EEE P.Siva Subramanian,A.P/EEE G.Sathish Kumar,A.P/EEE

Resource Person Details:

1. Er.S.Sudhakar,Sr.Business Development Engineer
2. Er.R.Nagarjun,Application Engineer
3. Er.S.Loganathan ,Application Engineer

Thanking you.

Yours faithfully

(Dr.G.MohanBabu)

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Dindigul-Palani Highway, Dindigul-624002

CIRCULAR

25/02/2023

This is to inform that six days training program on **INDUSTRIAL ROBOTICS** is going to conduct for IV & III YEAR EEE students from 27.02.2023 to 04.03.2023, by AXIS GLOBAL AUTOMATION, Coimbatore. All the students are informed to attend and enrich your knowledge.

Faculty In-charge

HOD/EEE

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

TECHNOLOGY TRAINING ON "INDUSTRIAL ROBOTICS

ATTENDANCE SHEET

S. No.	Reg.no.	Student Name	06.03.23		07.03.23		08.03.23		09.03.23		10.03.23		11.03.23	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
1	922119105001	ABINAYA S S												
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3	922119105003	ARUL NITHISH KUMAR R												
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43	922119105302	BAVADHARANI U												
44	922119105503	BHARATHKUMAR K												

FACULTY IN-CHARGE

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PRINCIPAL

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Faculty Incharge

HoD

Principal

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Summary Report

The department of Electrical and Electronics Engineering, SSM Institute of Engineering and Technology conducted **Technology training on Industrial Robotics** from 6th March 2023 to 11th March 2023. The course covered topics the anatomy of industrial robots deals with the assembling of outer components of a robot such as wrist, arm and body. Before jumping into robot configurations, here are some of the key facts about robot anatomy. (a) Joints and Links (b) Common Robot Configurations. Students have attended assessment tests at the end of the course and certificates were issued. The students from third and final year EEE attended the course and got benefitted.

AGIIT AXIS GLOBAL INSTITUTE OF INDUSTRIAL TRAINING
Asia's Advanced Automation & Robotics Institute

OFFER No: AGIIT/VAP/CBE/22-23/115 **OFFER DATE:22.02.2023**

CUSTOMER : SSM Institute of Engineering and Technology

KIND ATTEN :Mr.MANOJ

TRAINING PROGRAM: VALUE ADDED PROGRAM (VAP)

CONTENTS:

1. INTRODUCTION

Axis Global Automation Group of Companies is one of India's leading Industrial Automation and Robotics Engineering Solution provider. The company provides complete turnkey solutions for the automation needs of all industries. The company has a dedicated manufacturing unit for control panels. The company is the industry channel partner for Yaskawa Motoman in India. Key industries catered to include automotive industries, manufacturing and process industries, food & beverage industries, oil & gas, chemical, biotechnology and pharmaceutical industries.

Our Services include:

- Engineering & Consulting in Automation – Controls – Robotics
- Installation & Commissioning Services
- Maintenance & Field Services
- New Product Development
- Control Panel Manufacturing
- Special Purpose Machines (Laser Cutting Machines etc.)
- Machine Tending Services (Automated and Robotics Systems)
- Retrofit Projects

Axis Global Automation today is a multi-faceted business group with interests in two business domains including:

1. Industrial Automation & Robotics System Integration
2. New Product Development (Special Purpose Machines, Customized Robotic Solutions, etc.)
3. Technical Training

Axis Global Institute of Industrial Training (AGIIT) is the leading Industrial Automation

& Robotics technical training campus in India. We offer real-time, hands-on industry oriented training in technologies such as PLC, SCADA, DCS, HMI, VFD, Servo as well as Robotics. We are the exclusive training partner for Yaskawa Motoman Japan and also have strategic training partnerships with OEMs such as Horner, Siemens, and Wago

Research & Development Team:

The industrial experts from Axis Global Automation run a R&D unit that is responsible for ensuring that our industrial solutions meet global standards and enable our clients achieve operational excellence. Our R&D unit is also responsible for constantly upgrading our technical training content to ensure that we stay abreast with the development in the automation and robotics sector.

2. TRAINING METHODOLOGY:

- Hands-On practical training
- Live Demonstrations
- Work on real-time industrial projects
- Industry Expert Lectures & Seminars for Learning the current technology trends
- Case Studies for conceptual training

3. TRAINING HIGHLIGHTS:

- Fully Equipped Advanced Lab
- Mobile Training Unit for Training Off-Campus
- Hands-on, Practical, Industry Oriented Training
- Case Studies For Various Processes

- Individual Focus
- Industry Experts as trainers
- Real Time Projects
- On-site Industrial Training

4. TRAINING BENEFITS:

- Understand the need and application of automation in industries
- Comprehensive programming, designing and troubleshooting knowledge on automation and robotics tools and technologies
- Enable selection, deployment and maintenance of automation and robotics tools in the industries
- Practical training that enables candidates to be deployed immediately on-the-job

5. SPECIFIC AREAS OF EXCELLENCE:

Oil & Gas

Food & Beverages

Machine Builder Solutions (OEM)

Metals, Mining, Cement

Packaging & Publishing

Power and Electricity

Automotive & Transportation

Pharmaceuticals

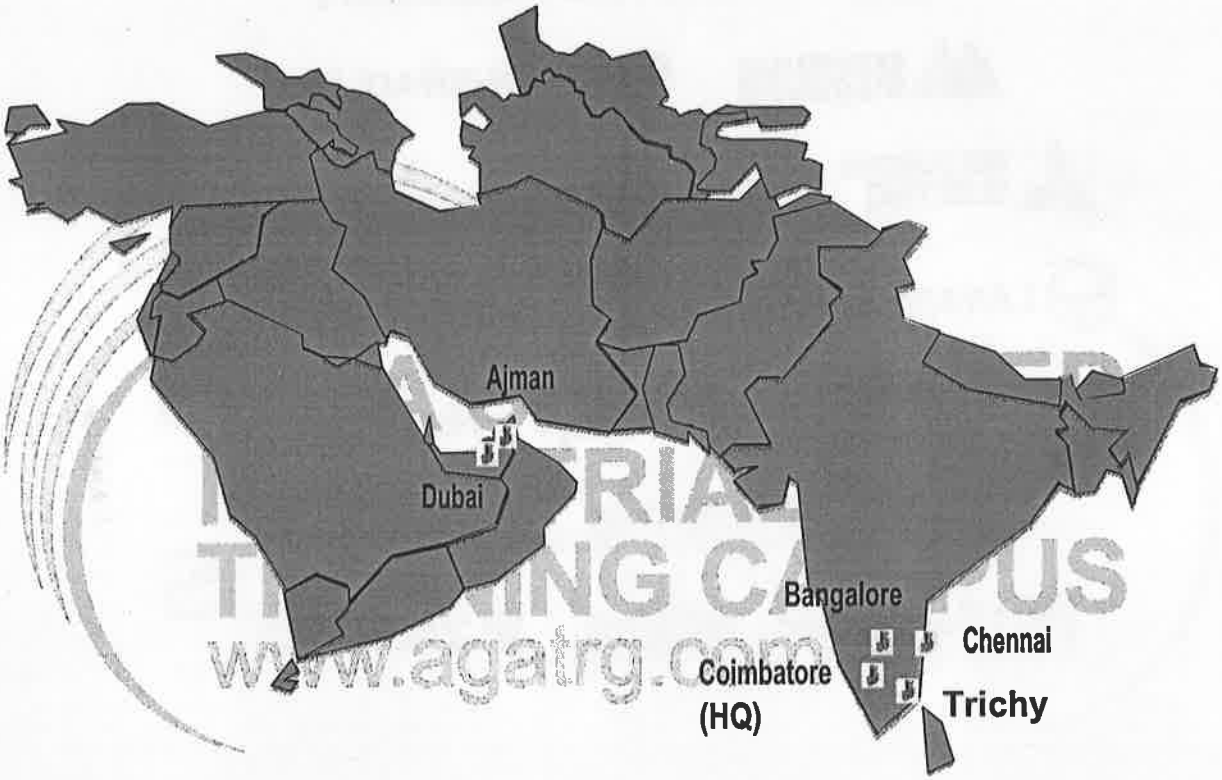
Building Management Systems

Paper, Pulp and Sugar Printing,

Textile & Fiber

Water, Waste-water Plants

6. OUR GLOBAL PRESENCE:



AGIIT AXIS GLOBAL INSTITUTE OF INDUSTRIAL TRAINING
Asia's Advanced Automation & Robotics Institute

7. OUR TRAINING BRANDS:

CORPATE OFFICE : #33, KATHIR AVENUE,AANDAL STREET, LAKSHMIPURAM , HOPES COLLEGE, COIMBATORE-641004
PHONE NUMBER:0422-4276113,+91 9655 758 759
www.agatrg.com

8. OUR CLIENTS:

Customized Training Clients

AGIIT AXIS GLOBAL INSTITUTE OF INDUSTRIAL TRAINING

9. VALUE ADDED PROGRAM PROPOSAL & OVERVIEW:

S.No	Training On	Duration in days 7hrs /day	Fees per student (plus 18% GST)
1.	Certified in Industrial Robotics |PLC & ,YASKAWA MOTOMAN, MOTOSIM S/W SIMULATION|	5 Days	2000/-

AXIS GLOBAL INSTITUTE OF INDUSTRIAL TRAINING

Our Services

Industrial Based Training | Industrial Based Projects | Industrial Workshops Industrial Seminars | Guest Lectures | Staff Training | Industrial Visit | Placements Institutional Lab Requirements | Industrial Lab Requirements

Center of Excellence (COE) – Advanced Research Lab for Robotics & Automation

Thanks & Regards

Sudhakar. S

Sr.Business Development Engineer
AGIIT
9655 758 759 & 9841 731 732

*From Axis Global Automation:

1. Trainers
2. Necessary Software & Materials as per the training Modules
3. Certificates from our end after completion.

*From College:

1. Student strength of Minimum 45 Nos
2. Seminar Hall, Classroom Facilities, LCD Projector & Speakers system
3. Lab Facilities with upgraded XP-2 OS systems (Max. 2 Student per system)
4. Accommodation Facilities & Food Facilities for our Trainers, if applicable
5. Vehicles Facilities for Transportation of Materials, if applicable

10. TERMS & CONDITIONS

PAYMENTS, DUTIES & TAXES:

1. The prices quoted are exclusive of 18% GST (i.e. Central GST/ State GST).
2. TDS @ 10% Extra as May applicable at the time of Training.
3. 100% of Training fees payment should be receipt at the time of 100% training completion.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

TECHNOLOGY TRAINING ON "INDUSTRIAL ROBOTICS

MARK STATEMENT

S. No.	Reg.no.	Student Name	MARK
1	922119105001	ABINAYA S S	24
2	922119105002	ANIESH ANGEL A	20
3	922119105003	ARUL NITHISH KUMAR R	18
4	922119105004	BEBINA RITHIKA J	6
5	922119105005	BRUMMA THAMO THARAN M	12
6	922119105006	DHEEPAN KUMAR G	6
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19	922119105020	MOHAMMED JAVITH S	7
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TECHNOLOGY TRAINING ON "INDUSTRIAL ROBOTICS"

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1	922120105001	M.AKASHKUMAR	11
2	922120105002	S.A.AMANULLA	06
3	922120105003	P.M.BALAJI	18
4	922120105005	U.DINESHKUMAR	17
5	922120105006	T.GEETHANJALI	21
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Faculty Incharge

HoD/EEE

PRINCIPAL

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Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL ROBOTICS

ROBOTICS MULTIPLE CHOICE QUESTION

Name of the student:
Year/Sem:
Date:

1. A place where power, information, or a result leaves a system
1. chassis
2. output
3. sensor
4. troubleshooting

Answer: output

2. Which of the following describes the use of technology or machinery, specifically involving gases?
1. Pneumatics
2. Hydraulics
3. Actuation
4. Carbonation

3. The position or alignment relative to points of the compass or other specific directions.
1. Loops
2. Sensor
3. Chassis
4. Orientation

4.A A mechanism having its motive power so concealed that it appears to move spontaneously
1. Automatic
2. Clock Jack
3. Robot
4. Automata

5. The the branch of technology that deals with dimensions of microscopic proportion, is known as?
1. Nanny technology
2. Nanotechnology
3. Micro technology
4. Micro machinery

6. Which of the following is not an advantage of Robots?

1. They can assist humans with disabilities
2. They can replace jobs
3. They can be used in dangerous environment
4. They don't get tired or require a break

7. The Hummingbird _____require extra power to be able to work.

1. Sensors
2. LEDs
3. Motors
4. Tri-Color LEDs

8. The branch of technology that deals with the design, construction, operation, and application of robots_____–

1. levers
2. robotics
3. creative power
4. Science CSF

9. When working in a group for robotics, students should_____–

1. stay on task but don't work with other group members
2. Socialize with group members outside of your group and then work alone
3. Socialize with other group members and don't help your group
4. stay on task and work with other group members appropriately

10. A rigid external covering for the body in some invertebrate animals but also robots.

1. Exoskeleton
2. Armor
3. Endoskeleton
4. Hardware

11. The 3rd law of robotics Spirit Isaac Asimov first announced the 3 laws of robotics in 1942.

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm
2. A robot can't go to school
3. A robot must obey orders given it by human beings except where such orders would conflict with the First law
4. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law

12. How many systems does a robot have?

1. 2
2. 6
3. 4
4. 3

13. Engines and joints belong to what system?

1. Digestive system
2. Sensory system
3. Electric system
4. Mechanic system

14. How many types of robots are there?

1. 7
2. 10
3. 6
4. 8

15. What are the components of the electric system?

1. Electric joints and cables
2. Batteries and electric wiring
3. Engines and joints
4. thunder and lightning

16. How many components does the control system have?

1. 4
2. 1
3. 2
4. 5

17. The processor belongs to the

1. Sensory system
2. Mechanic system
3. Electric system
4. Control system

18. One of these is NOT a type of robot

1. Medical
2. Industrial
3 Household
4.Apologetic

19. The small mobile robot base used in the Robot Educator. This robot is able to perform some but not all of the tasks in the Robotics Engineering activities

1. Light sensor
2. Lego Mindstorms Education Software
3. Robot
4. Robot Educator Model (REM)

20. A block is the basic unit of programming in the NXT programming Software. Blocks perform their operations in order along the Sequence Beam

1. Touch Sensor
2. Block (programming)
3. Ports
4. Behaviors

21. The primary source of physical motion in the Mindstorms NXT system.

1. Interactive Servo Motor
2. Behaviors
3. Light Sensor
4. Touch Sensor

22.A machine that is able to interact with and respond to its environment. characterized by three central capabilities: the ability to Sense, the ability to Plan, and the ability to Act_

1. Code
2. Taskbot
3. Robots
4. Ports

23.The three characteristic capabilities that define a robot_____

1. Comment
2. Sensor
3. Sense-Plan-Act
4. NXT Brick

24.When working in a group for robotics, students should_____

1. Socialize instead of work and then work alone
2. Stay on task and don't work with your group
3. Work alone and don't socialize with group members
4. stay on task and work with group members appropriately

25.General term for any command or group of commands in a program. In the NXT Programming Software, this is one or more blocks_____

1. Comment
2. Code
3. Ports
4. Robot

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Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL ROBOTICS

25

ROBOTICS MULTIPLE CHOICE QUESTION

Name of the student: ABINAYA
Year/Sem:
Date:

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1. chassis
2. output
3. sensor
4. troubleshooting

Answer: output

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1. Pneumatics
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   4. 3

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   2. Sensory system
   3. Electric system
   4. Mechanic system

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   2. 10
   3. 6
   4. 8

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    1. Electric joints and cables
    2. Batteries and electric wiring
    3. Engines and joints
    4. thunder and lightning

16. **How many components does the control system have?**
    1. 4
    2. 1
    3. 2
    4. 5

17. **The processor belongs to the**
    1. Sensory system
    2. Mechanic system
    3. Electric system
    4. Control system

18. **One of these is NOT a type of robot**
    1. Medical
    2. Industrial
    3. Household
    4. Apologetic

19. **The small mobile robot base used in the Robot Educator. This robot is able to perform some but not all of the tasks in the Robotics Engineering activities**
    1. Light sensor
    2. Lego Mindstorms Education Software
    3. Robot
    4. Robot Educator Model (REM)

20. **A block is the basic unit of programming in the NXT programming Software. Blocks perform their operations in order along the Sequence Beam**
    1. Touch Sensor
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21. **The primary source of physical motion in the Mindstorms NXT system.**
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22. **A machine that is able to interact with and respond to its environment. characterized by three central capabilities: the ability to Sense, the ability to Plan, and the ability to Act_**
    1. Code
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23. **The three characteristic capabilities that define a robot_____**
    1. Comment
    2. Sensor
    3. Sense-Plan-Act
    4. NXT Brick

24.When working in a group for robotics, students should_____

1. Socialize instead of work and then work alone
2. Stay on task and don't work with your group
3. Work alone and don't socialize with group members
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25.General term for any command or group of commands in a program. In the NXT Programming Software, this is one or more blocks_____

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Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL ROBOTICS

ROBOTICS MULTIPLE CHOICE QUESTION

Name of the student: H. Thrishath Daniel
Year/Sem: III
Date: 11/03/2023

23

1. A place where power, information, or a result leaves a system

1. chassis
2. output
3. sensor
4. troubleshooting

Answer: output

2. Which of the following describes the use of technology or machinery, specifically involving gases?

1. Pneumatics
2. Hydraulics
3. Actuation
4. Carbonation

3. The position or alignment relative to points of the compass or other specific directions.

1. Loops
2. Sensor
3. Chassis
4. Orientation

4.A A mechanism having its motive power so concealed that it appears to move spontaneously

1. Automatic
2. Clock Jack
3. Robot
4. Automata

5. The the branch of technology that deals with dimensions of microscopic proportion, is known as?

1. Nanny technology
2. Nanotechnology
3. Micro technology
4. Micro machinery

6. Which of the following is not an advantage of Robots?

1. They can assist humans with disabilities
2. They can replace jobs
3. They can be used in dangerous environment
4. They don't get tired or require a break

7. The Hummingbird _____require extra power to be able to work.

1. Sensors
2. LEDs
3. Motors
4. Tri-Color LEDs

8. The branch of technology that deals with the design, construction, operation, and application of robots_____–

1. levers
2. robotics
3. creative power
4. Science CSF

9. When working in a group for robotics, students should_____–

1. stay on task but don't work with other group members
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3. Socialize with other group members and don't help your group
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10. A rigid external covering for the body in some invertebrate animals but also robots.

1. Exoskeleton
2. Armor
3. Endoskeleton
4. Hardware

11. The 3rd law of robotics Spirit Isaac Asimov first announced the 3 laws of robotics in 1942.

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm
2. A robot can't go to school
3. A robot must obey orders given it by human beings except where such orders would conflict with the First law
4. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law

12. How many systems does a robot have?

1. 2
2. 6
3. 4
4. 3

13. Engines and joints belong to what system?

1. Digestive system
2. Sensory system
3. Electric system
4. Mechanic system

14. How many types of robots are there?

1. 7
2. 10
3. 6
4. 8

15. **What are the components of the electric system?**
    1. Electric joints and cables
    2. Batteries and electric wiring
    3. Engines and joints
    4. thunder and lightning

16. **How many components does the control system have?**
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Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL ROBOTICS

13

ROBOTICS MULTIPLE CHOICE QUESTION

Name of the student: S. MOHAMED ABURAR
Year/Sem: III
Date: 17-03-23

1. A place where power, information, or a result leaves a system

1. chassis
2. output
3. sensor
4. troubleshooting

Answer: output

2. Which of the following describes the use of technology or machinery, specifically involving gases?

1. Pneumatics
2. Hydraulics
3. Actuation
4. Carbonation

3. The position or alignment relative to points of the compass or other specific directions.

1. Loops
2. Sensor
3. Chassis
4. Orientation

4.A A mechanism having its motive power so concealed that it appears to move spontaneously

1. Automatic
2. Clock Jack
3. Robot
4. Automata

5. The the branch of technology that deals with dimensions of microscopic proportion, is known as?

1. Nanny technology
2. Nanotechnology
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6. Which of the following is not an advantage of Robots?

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3. 2
4. 5

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Department of Electrical and Electronics Engineering

TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL ROBOTICS

22

ROBOTICS MULTIPLE CHOICE QUESTION

Name of the student: Hasini. M
Year/Sem: IV
Date: 11-03-23

1. A place where power, information, or a result leaves a system

1. chassis
2. output
3. sensor
4. troubleshooting

Answer: output

2. Which of the following describes the use of technology or machinery, specifically involving gases?

1. Pneumatics
2. Hydraulics
3. Actuation
4. Carbonation

3. The position or alignment relative to points of the compass or other specific directions.

1. Loops
2. Sensor
3. Chassis
4. Orientation

4.A A mechanism having its motive power so concealed that it appears to move spontaneously

1. Automatic
2. Clock Jack
3. Robot
4. Automata

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1. Nanny technology
2. Nanotechnology
3. Micro technology
4. Micro machinery

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2. They can replace jobs
3. They can be used in dangerous environment
4. They don't get tired or require a break

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Department of Electrical and Electronics Engineering

STUDENT FEEDBACK FORM

Name of the Student: Geethanjali . T

Year/Sem: 2023 / VI

Date: 11. 3.23

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content		✓			
2	Skill development		✓			
3	Motivation			✓		
4	Regularity and punctuality of trainer			✓		
5	Coverage of syllabus			✓		
6	Interaction		✓			
7	Individual attention		✓			
8	Outcome		✓			
9	Other suggestions			-		

Faculty incharge

HoD/EEE

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY, DINDIGUL - 624 002

Department of Electrical and Electronics Engineering

STUDENT FEEDBACK FORM

Name of the Student: Manjula. S

Year/Sem: IV / VII

Date: 11/3/03

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content	✓				
2	Skill development		✓			
3	Motivation		✓			
4	Regularity and punctuality of trainer		✓			
5	Coverage of syllabus	✓				
6	Interaction		✓			
7	Individual attention	✓				
8	Outcome		✓			
9	Other suggestions		–			

Faculty incharge

HoD/EEE

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY, DINDIGUL - 624 002

Department of Electrical and Electronics Engineering

STUDENT FEEDBACK FORM

Name of the Student: R. MUTHUKUMAR

Year/Sem: IV / VII

Date: 11/03/23

Dear Student,

You are required to give your feedback on the following aspects. Please tick in the respective column.

S.No	Criteria	Rating				
		Excellent	Very good	Good	Fair	Satisfactory
1	Course content	✓				
2	Skill development		✓			
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Faculty incharge

HoD/EEE

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Asia's Advanced Automation Training Institute

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AGIIT/22-23/CTRG/1498

CERTIFICATE OF PARTICIPATION

This is to certify that Mr. /Ms **M.HARIPRASATH** has successfully completed the six days training program on Basics of "**Industrial Robotics – Yaskawa Motoman**". During the period from 27.02.2023 to 04.03.2023 conducted at SSM Institute of Engineering & Technology

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AGIIT/22-23/CTRG/1494

CERTIFICATE OF PARTICIPATION

This is to certify that Mr. /Ms **M.SURIYA PRAKASH** has successfully completed the six days training program on Basics of "**Industrial Robotics – Yaskawa Motoman**". During the period from 27.02.2023 to 04.03.2023 conducted at SSM Institute of Engineering & Technology

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AGIIT/22-23/CTRG/1489

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www.agatrg.com
CHENNAI-93

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INFINITE POSSIBILITIES

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REG.NO.1184

AGIIT/22-23/CTRG/1493

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This is to certify that Mr. /Ms **R.SHANMUGAVEL** has successfully completed the six days training program on Basics of "**Industrial Robotics – Yaskawa Motoman**". During the period from 27.02.2023 to 04.03.2023 conducted at SSM Institute of Engineering & Technology

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AGIIT/22-23/CTRG/1492

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TECHNOLOGY TRAINING PROGRAMME ON INDUSTRIAL ROBOTICS

22

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Year/Sem: IV
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