

A Seminar on

Industry 4.0: Artificial intelligence Dr Karhe R.R.

Electrical Engg

Activity Report

Academic Year	2024-25
Program Driven by	
Quarter	III
Program / Activity Name	Capacity Building Program
Program Type	
Program Theme	Innovation and startups
Start Date	08-03-2025
End Date	08-03-2025
Duration of the Activity (in Mins)	60
Number of Student Participant	50
Number of Faculty Participant	70
Number of external Participant	--
Expenditure Amount in Rs.	
Any Remark	--
Mode of Session Delivery	Offline
Objective	
Benefit in terms of Learning / Skills / Knowledge obtained	
Feedback	
Video url (mp4)	
Photograph 1 (jpg)	Attached
Photograph 2 (jpg)	Attached
Overall report of the Activity (pdf)	As given below



Dr. P. H. Zope
Convener IIC

Report on Seminar: "Industry 4.0 – Artificial Intelligence"

Organized by: Department of Electrical Engineering

Speaker: Dr. R.R. Karhe

Topic: Industry 4.0 and Artificial Intelligence

Seminar Report on Industry 4.0: Artificial Intelligence



Abstract

Industry 4.0 represents the fourth industrial revolution, integrating advanced technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), Big Data, and robotics to create smart manufacturing systems. This report focuses on the role of AI in Industry 4.0, emphasizing its applications, advantages, challenges, and future scope. AI drives intelligent automation, predictive analytics, and decision-making, transforming industries through efficiency, customization, and innovation.

1. Introduction

Industry 4.0 marks a significant shift from traditional manufacturing to a connected, intelligent, and automated industrial environment. Artificial Intelligence plays a pivotal role in enabling machines to

simulate human intelligence processes. From smart factories to AI-driven supply chains, industries are leveraging AI for optimization, productivity, and competitiveness.

2. Key Technologies in Industry 4.0

- Artificial Intelligence (AI)
 - Internet of Things (IoT)
 - Cyber-Physical Systems (CPS)
 - Big Data and Analytics
 - Cloud Computing
 - Autonomous Robotics
 - Augmented and Virtual Reality
-

3. Role of AI in Industry 4.0

3.1 Smart Manufacturing

AI-powered machines can self-optimize, detect faults, and make autonomous decisions. Predictive maintenance using machine learning reduces downtime and improves equipment lifespan.

3.2 Quality Control

Computer vision and deep learning algorithms identify defects in real time, ensuring high-quality standards.

3.3 Supply Chain Optimization

AI analyzes large datasets to forecast demand, manage inventory, and optimize logistics.

3.4 Human-Robot Collaboration

AI-driven robots assist humans in tasks requiring precision, strength, or hazardous conditions, enhancing workplace safety and efficiency.

3.5 Decision Support

AI systems analyze operational data to assist managers in making faster and more accurate decisions.

4. Benefits of AI in Industry 4.0

- Improved efficiency and productivity
 - Enhanced product quality
 - Reduced operational costs
 - Real-time monitoring and diagnostics
 - Customization and flexibility in manufacturing
-

5. Challenges

- High implementation costs
 - Data privacy and cybersecurity risks
 - Skill gap and workforce displacement
 - Complexity in integration with legacy systems
 - Ethical concerns in autonomous decision-making
-

6. Future Scope


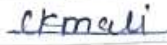

















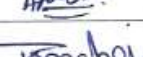
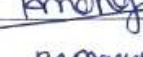
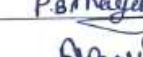

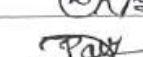

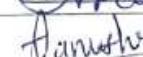
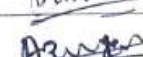
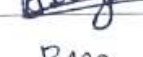


As AI continues to evolve, its integration with other Industry 4.0 technologies will deepen. AI-enabled factories will become more adaptive and self-regulating. Research into explainable AI, ethical standards, and human-centered automation will define the future industrial landscape.

7. Conclusion



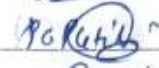
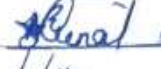
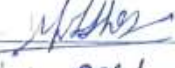
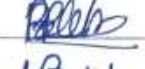
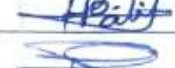


Artificial Intelligence is a cornerstone of Industry 4.0, enabling unprecedented levels of automation and intelligence. While there are challenges, the potential benefits far outweigh the drawbacks. Successful adoption requires a balanced approach that includes technological advancement, workforce development, and ethical considerations.





Roll no.	Name	Sign
54	Kalyani Bapu pati	
17	Chaitali K. Mali	
60	Megha Manoj Patil	
45	Devayani Samadhan patil	
74	Shruti Kiran patil.	
73	Shrushti Rakesh Patil	
80	Teena Hemraj Patil	
28	Nizgala Natendra Narkhede	
33	Vishakha Pramod Nikam	
46	Devayani Pravin Patil	
38	Ankita Sanjay Patil	
41	Rutuja Ravindra Patil	
32	Lavanya Santosh Nikam	
83	Pranjal Mukunda Patil	
02	Bhagyashree Anant Khewalkar	
79	Tanvi Vinesh sing Patil	
70	Ranjana Dnyaneshwar Patil	
19	Prapti Shrawan Mali	
53	Jayshree G. Patil	
08	Bhumiika Dilip Mahajan	
10	Khushi Rajendra Mahajan	
06	Priyanka Bhagwan Magare	
39	Ankita Vilas Patil	
37	Keerti Kaduba Pordeshi	
36	Trupti Dyaneshwar Palve	
55	Khushi Vinayak Patil	
78	Tanushree Pandharinath Patil	
07	Aniket Balwant Mahajan	
05	Prajwal Vinod Machankar	
59	Mayur Sursh Patil	

Sr.No	Name of Student	Sign.	Roll No.
1)	Utkarsha S. Patil	<u>Utkarsha</u>	2
2)	Tanvi Vinod kulkarni	<u>Kulkarni</u>	62
3)	Utkarsha S. Suryawanshi	<u>US</u>	38
4)	Gayatri Tushar Shingate	<u>Shingate</u>	26
5)	Simran Shawaka Tadari	<u>Tadari</u>	41
6)	Mansi suresh shirade	<u>Shirade</u>	27
7)	Snigdha Ratilal Patil	<u>Patil</u>	71
8)	Sejal Dipak Sandhanshi	<u>Sandhanshi</u>	21
9)	Pradnya Vijay Nikam	<u>Pradnya</u>	67
10)	Saniya Javed Shaikh	<u>Saniya</u>	74
11)	Gauri Vijay Sonar	<u>Gauri</u>	75
12)	Chhayashree Pralhal Patil	<u>Patil</u>	69
13)	Vaibhavi Vinayak patil	<u>Vaibhavi</u>	3
14)	Troiveni Ashok Solanki	<u>Troiveni</u>	29
15)	Abhijeet. Girish. Patil	<u>Patil</u>	68
16)	Shreyas. Vijay. Sangore	<u>Shreyas</u>	72
17)	Varad Anil Akurkar	<u>Varad</u>	55
18)	Aryan Kamal Bajaj	<u>Aryan</u>	53
19)	Reham Akiloddin Shaikh	<u>Reham</u>	73
20)	Ganesh P. Sushir	<u>G.P. Sushir</u>	40
21)	Yogeshwar Sopan Wagh	<u>Yogeshwar</u>	51
22)	OM Rajendra Talele	<u>Talele</u>	43
23)	chandheersant Devidas Ahire	<u>Ahire</u>	54
24)	Faigan Lukman Tadvi	<u>Tadvi</u>	79
25)	Kalpesh Ananda Sonawane	<u>Kalpesh</u>	31
26)	Chiranjay Digambar Rajput	<u>Chiranjay</u>	16

Roll No	Name	Sign
23	Aditya Arun more	
65	Pratik Rajesh Patil	
66	Prathmesh Avinash Patil	
26	Kunal Vasant Nannaware	
03	Amol Govinda Kumbhar	
04	Ramchandra Bhatu Lohar	
50	Harshal Bharat Patil	
12	Pranav Bhaskar Mahajan	
13	Sumit Vinod Mahajan	

Attendance Sheet

Date and Sign		15/03/25	29/03/25	
SN	Name of faculty Member	Dept.		
1	Dr. P.A. Shirule	Civil		02
2	Dr. F.I. Chavan	Civil		04
3	Dr. Sonali B. Patil	Civil		03
4	Mr. J.N. Kale	Civil		03
5	Ms. Jyoti R. Mali	Civil		05
6	Pankaj Ramdas Punase	Civil		03
7	Ms. Dipika Purushottam Mali	Civil		01
8	Kalyani Ganesh Bendale	Civil		00
9	Dr. K.P. Adhiya	Computer		04
10	Dr. Manoj E Patil	Computer		04
11	Mr. Ashish T. Bhole	Computer		04
12	Dr. Akash D. Waghmare	Computer		06
13	Dr. Dnyaneshwar K. Kirange	Computer		06
14	Dr. Pankaj H. Zope	Computer		03
15	Dr. Surendra P. Ramteke	Computer		06
16	Ms. Shital A. Patil	Computer		03
17	Mr. Sarkarsinha Harshinha Rajput	Computer		05
18	Mr. Mohan Pramod Patil	Computer		05
19	Mr. Ramkrishna Hari Patil	Computer		05
20	Mr. Pramodgiri B. Gosavi	Computer		02
21	Ms. Priyanka Vinod Medhe	Computer		06
22	Mr. Krunal Chadrashekhwar Pawar	Computer		03
23	Ms. Pooja Mukundrao Khandar	Computer		03
24	Ms. Ashwini Arun Kakde	Computer		03
25	Ms. Mayuri Rajesh Chandratre	Computer		04
26	Ms. Shama S Pawar	Computer		03
27	Mr. Mohammed Shafique Shaikh	Computer		05
28	Ms. Tejashri Anil Patil	Computer		—
29	Ms. Prachi Pushkaraj Chaudhari	Computer		—
30	Ms. Utkarsha Prmod Narkhede	Computer		—
31	Ms. Soniya Premraj Chaudhari	Computer		—
32	Ms. Dipali Daulatrao Phadat	Computer		—
33	Mr. V. S. Pawar	Electrical		03
Pranesh S. Sarda		02/12		02

Attendance Sheet

SN	Date and Sign	Dept.	15/03/25	29/03/25	
34	Mr. M. Mujtahid Ansari	Electrical			05
35	Dr. Suhas M. Shembekar	Electrical		—	04
36	Dr. Rajesh R. Karhe	Electrical			04
37	Mr. Muqem Khan	Electrical	—		04
38	Mr. Tanveer Khatik	Electrical		—	04
39	Mr. Vijay Abaji Shinde	Electrical			02
40	Dr. M.P. Deshmukh	E&TC	—		04
41	Dr. V.M. Deshmukh	E&TC			04
42	Dr. N.M. Kazi	E&TC			04
43	Dr. Atul H. Karode	E&TC		—	04
44	Mr. Sunil K. Khode	E&TC		—	03
45	Ms. Rajashri B. Patil	E&TC			05
46	Dr. P.G. Damle	Mechanical		—	04
47	Mr. N. K. Patil	Mechanical	—		04
48	Dr. K. Shrivastav	Mechanical		—	02
49	Dr. Devendra B. Sadaphale	Mechanical			04
50	Dr. P. M. Solanki	Mechanical		—	04
51	Dr. Ajay R. Bhardwaj	Mechanical			03
52	Dr. Dipak C. Talele	Mechanical			05
53	Dr. Vijay R. Diware	Chemical	—		04
54	Dr. S. A. Thakur	Chemical	—	—	03
55	Mr. V. P. Sangore	Chemical	—		04
56	Mrs. Sarika S. Pawar	Chemical		—	03
57	Mrs. Ruchita S. Naik	Chemical		—	04
58	Dr. Sandip S. Patil	First Year			05
59	Dr. K. S. Patil	First Year	—	—	02
60	Dr. Sunita S. Patil	First Year	—		04
61	Dr. Prashant N. Ulhe	First Year			05
62	Mr. Amol Chandrakan Wani	First Year	—	—	03
63	Ms. Priti Ramesh Sharma	First Year		—	02
64	C.U. Nikam	First Year		—	01

Attendance Sheet

Date and Sign		Dept		Signs 29/01/21	
Sl. No.	Name of Faculty Member	Dept			
61	Mr. Pratik D. Patel	First Year	P	P	04
62	Mr. Dhanendra J. Doshi	First Year			04
63	Mr. Mahendra S. Patel	First Year			01
64	Mr. Manoj Prasad Kulkarni	First Year			04
65	Mr. Dharmendra Chandrakant Vagade	First Year			03
66	Dr. Anand T. Patel	First Year			03
67	Mrs. Nitesh Sawhney	First Year			01
68	Mr. Tarun S. Chaudhari	First Year			07
69	Mrs. Anand Dhanraj Patel	First Year			00
70	Mr. Dhanendra S. Vagade	First Year			03
71	Mrs. Poo Manoj Mali	First Year			04
72	Mr. Dhanendra S. Chaudhari	First Year			02
73	Mr. Sachin Tejendra Bhalekar	First Year			03
74	Dr. Mahesh S. Rawlani	MBA			03
75	Dr. Rishi A. Modhyan	MBA			04
76	Mr. Farooq A. Khan	MBA			04
77	Mrs. Bharti F. Joshi	MBA			05
78	Mrs. Sakshi Manoj Modhyan	MBA			04
79	Mr. Rishabh Sunil Patel	MBA			02
80	Mr. Anand Dhanraj Sawhney	MBA			02
81	Dr. Pooja Dhanraj Vagade	MBA			02
82	Mr. Tejendra Dhanraj Vagade	MBA			02
83	Mr. Anand Dhanraj	MBA			02
84	Mr. Dhanendra Dhanraj	MBA			02
85	Mr. Dhanendra Dhanraj	MBA			02
86	Mr. Dhanendra Dhanraj	MBA			02
87	Mr. Dhanendra Dhanraj	MBA			02
88	Mr. Dhanendra Dhanraj	MBA			02
89	Mr. Dhanendra Dhanraj	MBA			02
90	Mr. Dhanendra Dhanraj	MBA			02
91	Mr. Dhanendra Dhanraj	MBA			02
92	Mr. Dhanendra Dhanraj	MBA			02
93	Mr. Dhanendra Dhanraj	MBA			02
94	Mr. Dhanendra Dhanraj	MBA			02
95	Mr. Dhanendra Dhanraj	MBA			02
96	Mr. Dhanendra Dhanraj	MBA			02
97	Mr. Dhanendra Dhanraj	MBA			02
98	Mr. Dhanendra Dhanraj	MBA			02
99	Mr. Dhanendra Dhanraj	MBA			02
100	Mr. Dhanendra Dhanraj	MBA			02

Attendance Sheet

SN	Name of faculty Member	Dept.	08/02/25	15/2/25	08/03/25	
1	Dr. P.A. Shirule	Civil				2
2	Dr. F.I. Chavan	Civil				2
3	Dr. Sonali B. Patil	Civil				1
4	Mr. J.N. Kale	Civil				1
5	Ms. Jyoti R. Mali	Civil				3
6	Pankaj Ramdas Punase	Civil				2
7	Ms. Dipika Purushottam Mali	Civil				0
8	Kalyani Ganesh Bendale	Civil				0
9	Dr. K.P. Adhiya	Computer				2
10	Dr. Manoj E. Patil	Computer				2
11	Mr. Ashish T. Bhole	Computer				3
12	Dr. Akash D. Waghmare	Computer				3
13	Dr. Dnyaneshwar K. Kirange	Computer				2
14	Dr. Pankaj H. Zope	Computer				2
15	Dr. Surendra P. Ramteke	Computer				3
16	Ms. Shital A. Patil	Computer				1
17	Mr. Sarkarsinha Harshinha Rajput	Computer				2
18	Mr. Mohan Pramod Patil	Computer				0
19	Mr. Ramkrishna Hari Patil	Computer				3
20	Mr. Pramodgiri B. Gosavi	Computer				
21	Ms. Priyanka Vinod Medhe	Computer				2
22	Mr. Krunal Chadrashankar Pawar	Computer				2
23	Ms. Pooja Mukundrao Khandar	Computer				2
24	Ms. Ashwini Arun Kakde	Computer				2
25	Ms. Mayuri Rajesh Chandratre	Computer				2
26	Ms. Shama S. Pawar	Computer				2
27	Mr. Mohammed Shafique Shaikh	Computer				2
28	Ms. Tejashri Anil Patil	Computer				
29	Ms. Prachi Pushkaraj Chaudhari	Computer				
30	Ms. Utkarsha Prmod Narkhede	Computer				
31	Ms. Soniya Premraj Chaudhari	Computer				
32	Ms. Dipali Daulatrao Phadat	Computer				
33	Mr. V. S. Pawar	Electrical				2

Attendance Sheet

SN	Name of faculty Member	Dept.	08/02/25	15/02/25	08/03/25	
34	Mr. M. Mujtahid Ansari	Electrical				③
35	Dr. Suhas M. Shembekar	Electrical				③
36	Dr. Rajesh R Karhe	Electrical				③
37	Mr. Muqem Khan	Electrical				③
38	Mr. Tanveer Khatik	Electrical				③
39	Mr. Vijay Abaji Shinde	Electrical				③
40	Dr. M.P. Deshmukh	E&TC				③
41	Dr. V.M. Deshmukh	E&TC				②
42	Dr. N.M. Kazi	E&TC				②
43	Dr. Atul H. Karode	E&TC				③
44	Mr. Sunil K. Khode	E&TC				③
45	Ms. Rajashri B Patil	E&TC				③
46	Dr. P.G. Damle	Mechanical				③
47	Mr. N. K. Patil	Mechanical				③
48	Dr. K. Shrivastav	Mechanical				③
49	Dr. Devendra B. Sadaphale	Mechanical				③
50	Dr. P. M. Solanki	Mechanical				③
51	Dr. Ajay R. Bhardwaj	Mechanical				③
52	Dr. Dipak C. Talele	Mechanical				③
53	Dr. Vijay R. Diware	Chemical				③
54	Dr. S. A. Thakur	Chemical				③
55	Mr. V. P. Sangore	Chemical				③
56	Mrs. Sarika S. Pawar	Chemical				③
57	Mrs. Ruchita S. Naik	Chemical				③
58	Dr. Sandip S. Patil	First Year				③
59	Dr. K. S. Patil	First Year				③
60	Dr. Sunita S. Patil	First Year				③
61	Dr. Prashant N. Ulhe	First Year				③
62	Dr. Amol Chandrakan Wani	First Year				③
63	Ms. Priti Ramesh Sharma	First Year				③
64	C.U. Nikam	First Year				③

Attendance Sheet

SN	Date and Sign	Dept.	08/02/25	15/2/2025	08/03/25	
65	Mr. Pravin D. Patil	First Year	P	P	—	2
66	Ms. Deepmala I. Desai	First Year	Desai	Desai	Desai	6
67	Mr. Mahendra B. Patil	First Year	—	—	—	0
68	Ms. Meera Prassan Kulkarni	First Year	Yashwanth	—	Yashwanth	6
69	Ms. Dhanashree Shashikant Tayade	First Year	D.	—	D.	2
70	Ujawalsing T. Patil	First Year	Patil	Patil	—	2
71	Mrs. Nancy Sawhney	First Year	—	—	—	1
72	Ms. Tanuja Y. Chouhan	First Year	—	—	Tanuja	1
73	Mrs. Anjali Darshan Patil	First Year	—	—	—	0
74	Ms. Jayashree R. Tayade	First Year	R. Tayade	R. Tayade	R. Tayade	3
75	Mrs. Puja Mayur Malu	First Year	—	Malu	Malu	2
76	Mr. Dashrath U. Chaudhari	First Year	DCM	—	DCM	2
77	Mr. Sachin Topalu Bhalerao	First Year	Sachin	Sachin	Sachin	6
78	Dr. Mahesh V. Rawlani	MBA	—	—	—	1
79	Dr. Richa A. Modiyani	MBA	R.	—	R.	2
80	Ms. Farooza A. Kazi	MBA	F.	—	F.	2
81	Mrs. Bharti P. Joshi	MBA	B.P.	B.P.	B.P.	3
82	Mrs. Sakina Mujahid Husain	MBA	Sakina	Sakina	Sakina	3
83	Mr. Rohan Suresh Patil	MBA	—	R. Patil	R. Patil	2
84	Ms. Vrushali Dinkar Sonawane	MBA	V.S.	V.S.	—	2
85	Dr. Puri Dinesh Dagadu	MCA	D.P.	D.P.	D.P.	2
86	Ms. Sapana Ananrao Fegade	MCA	Sapana	Sapana	—	2
87	Mr. Aslan Shaikh	MCA	Aslan	Aslan	—	2
88	Ms. Dhanshee Rajendra Shinde	MCA	—	—	—	0
89	Ms. Chetana Mohan Kawale	MCA	Chetana	Chetana	Chetana	2
90	Ms. Vishakha Yadonao Pande	MCA	V. Pande	V. Pande	V. Pande	2
91	Ms. Bhagyashri Suresh Patil	MCA	—	—	B. Patil	1
92	Ms. Reeta Vinod Patil	MCA	R. Patil	R. Patil	R. Patil	2
93	Dr. Sudhir S. Patil	Library	S.	S.	—	2
94	Nikita Gokul Patil	Civil	—	N. Patil	N. Patil	2
95	V. S. Pawan	Electrical	V. S. Pawan	V. S. Pawan	V. S. Pawan	2
96	Aravesh Sonawane	Civil	—	—	—	0