




COLLEGE OF ENGINEERING BHUBANESWAR (COEB)
Plot No.1 (A), CNI Complex, Patia, Bhubaneswar – 751024, Odisha, India.
[AFFILIATED TO BPUT, ODISHA]
www.coeb.ac.in

DEPARTMENT OF MECHANICAL ENGINEERING
ADD-ON COURSE : Smart Manufacturing for Industry 4.0

[Programme: B.Tech, Mechanical Engg.]
Semester: 5th


PRINCIPAL
College of Engineering Bhubaneswar

Course Objectives:

- ❖ To impart basic idea in Industry 4.0.
- ❖ To provide students with good depth of knowledge of designing Industrial 4.0 Systems for various application.
- ❖ To create opportunity to expand their competitiveness further
- ❖ To understand the concept of future smart factories and the virtualization techniques and intelligent decision-making capabilities.

SYLLABUS

Total Lecture Hours: 40

MODULE 1:

(16 hours)

INDUSTRY 4.0: Concept, Globalization and emerging issues, The Fourth Revolution, LEAN manufacturing, Smart and connected business perspectives, Smart factories.
AUTOMATION: Programable Logic Controller (PLC) and its Programming software, Communication of different devices with PLC, Sensor, Smart Sensor, HMI design, Cyber Physical System – key components, ISA-95 architecture, CPS-5C architecture, Concept of Digit Twin

MODULE 2:

(16 hours)

COMMUNICATION: Protocols – MQTT, OPC UA, EtherNet/IP, Profinet, EtherCAT, etc; MQTT – History, MQTT broker, Message types, Quality of Service (QoS), Application; OPC UA – History, Specification, Client, Server, Programming with – Free and open-source software, Propriety software; Augmented Reality.
IoT Platform: Data Modelling, IoT platforms – Thing, basic functionalities, Abstract definition of Thing, Networks, etc; IoT Gateway, Machine interfaces – Cloud-based Mosquitto brokers, Programming with – Free and open-source software, Propriety software

MODULE 3:

(8 hours)

Machine Learning foundation: Learning algorithms – Supervised, Unsupervised, Self-learning, Feature learning, etc. Models – Artificial Neural Networks, Decision trees, Regression analysis.

Course Outcomes:

After completion of course the students will be able to:

- CO1: Introduce concept of Industry 4.0 for Smart Manufacturing.
- CO2: Understand use various hardware used in Smart Manufacturing.
- CO3: Understand need of various communication protocols, hardware and software.
- CO4: Understand cloud-computing IoT platform for Smart Manufacturing.
- CO5: Understand machine learning to make smart factories.

Text Book:

1. Christoph Jan Bartodziej, "The Concept Industry 4.0 – An Empirical Analysis of Technologies and Application in Production Logistics", Springer Gabler, 2015
2. Industry 4.0: Managing The Digital Transformation- Alp Ustundag , Emre Cevikcan, Springer
3. Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications", ISBN: 978-1-118-47347-4, Willy Publications.

Reference Book:

1. Alasdair Gilchrist, "Industry 4.0 – The Industrial Internet of Thigs", Springer Link, 2016


Online resources:

1. <https://www.sciencedirect.com/science/article/pii/S2351978918300672>
2. <https://www.sciencedirect.com/science/article/pii/S221282711630854X>
3. <https://www.sciencedirect.com/science/article/pii/S2212827114000857>

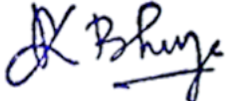
Evaluation Criteria

- Mandatory attendance of 75% for each student.
- Conduction of two internal assessments and students have to secure 50% marks in each assessment.
- Certificates will be awarded to each students fulfilling the above criteria.

Designed & developed by: Prof (Dr.) Sujit Kumar Khuntia & Prof. Jagannath Mohapatra


Principal
PRINCIPAL
College of Engineering Bhubaneswar


H.O.D. Mech. Engg
HOB
Mechanical Engineering
College of Engineering Bhubaneswar


PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR

Plot No.1 (A), CNI Complex, Patia, Bhubaneswar – 751024, Odisha, India.

NOTICE

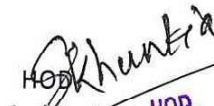
Department of Mechanical Engineering Add On Course 2020-2021

Ref No: COEB/ME/2020/23

Date: 28.08.2020

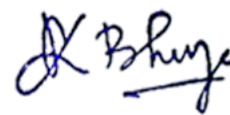
It is hereby informed to all the students that the Department of Mechanical Engineering is going to start the following Add-on courses for Academic year 2020-2021. All the students are instructed to enroll their names for the following courses on or before 10.09.2020. The classes will be commenced from 14/09/2020 in ON_LINE MODE from 5.30pm to 7.30pm. You can contact the following course co-ordinators for enrolment and any queries.

Sl No.	Name of Add-on Course	Sem	Duration in hours	Name of the course co-ordinators
1	Advanced Welding Techniques	3 rd	40	Dr. Sujit Ku. Khuntia
2	Smart Manufacturing for Industry 4.0	5 th	40	Prof. Jagannath Mohapatra
3	Boiler Safety	7 th	40	Prof. Tapas Kumar Chand


HOD
Mechanical Engineering Department
College of Engineering Bhubaneswar

Copy to:

1. Vice Chairman
2. Executive Director
3. Principal
4. All Notice Board.
5. A.O(Admin)
6. All HODs
7. Hostel, Security


PRINCIPAL
College of Engineering Bhubaneswar



**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)
ADD-ON COURSE ENROLLMENT SHEET**

ON-LINE MODE

Name of the Department: Department of Mechanical Engineering

Course Title: Smart Manufacturing for Industry 4.0

Semester : 5th

Academic Year: 2020-21

Duration: 40 hours

Student's Declaration/Undertaking

1. I do hereby undertake to participate in the above mentioned add on course.

2. I do hereby, promise to abide by the admissible rules and regulations, concerning discipline, attendance, etc. of the department, and also to follow the Code of Conduct prescribed for the students of the Institute, as in force from time to time.

Sl. No.	Registration No.	Name of the Student	Remarks by the Course Coordinator
1	1801219005	AMAN NIKHIL TOPNO	Certified that the Enrollment Sheet is prepared by taking the consents of the students to enroll themselves in this Certificate Course (Add-On) to be conducted in Virtual Mode (ON-LINE) during the Pandemic COVID'19 through the link provided by the Department. They have also gone through the declaration/undertaking to be strictly abided by them during the course period.
2	1801219009	ANKIT KUMAR NAYAK	
3	1801219019	ASHUTOSH BEHERA	
4	1801219032	BIKASH SAHA	
5	1801219034	BIPLAB ROUT	
6	1801219037	CHANDAN PARIDA	
7	1801219057	HAREKRUSHNA NAYAK	
8	1801219061	JASHOBANTA MUNDA	
9	1801219066	KHAGESWAR MALIK	
10	1801219067	KULDEEP KUMAR	
11	1801219089	NIHAL PRAJAPATI	
12	1801219092	OMKAR RAMANUJA	
13	1801219095	PADMAN HARIJAN	
14	1801219103	PRAVASINI MISHRA	
15	1801219106	PRIYABRATA BHUYAN	
16	1801219113	RAHUL KUMAR SETHI	
17	1801219114	RAHUL RAVIDAS	
18	1801219124	SALUKA SUNDI	
19	1801219126	SANDEEP KUMAR BEURA	
20	1801219128	SANJAYA SWAIN	
21	1801219134	SATYA BRATA ROUT	
22	1801219138	SAYUB ANSARI	
23	1801219143	SHRITAM PATRA	
24	1801219147	SK ZIAUDDIN	
25	1801219150	SOUBHAGYA RANJAN SAHU	
26	1801219157	SUBHRAJIT PATTNAYAK	
27	1801219167	SWAYAMSUBHAM PANDA	
28	1801219171	TUSHAR KUMAR SAMAL	
29	1801219172	UPENDRA SAHU	
30	1801219234	ABHISHEK PRABHUPAD	
31	1801219235	ABINASH ABANI KUMAR	
32	1801219236	ABINASH SETHY	
33	1801219237	AKHILESH MISHRA	
34	1801219238	AMIR HAMZA	
35	1801219239	ANKUSH KUMAR MOHANTY	
36	1801219240	ATIK RAGIB KHAN	
37	1801219241	BIBHUDENDU DAS	
38	1801219242	BIDYUT KUMAR PARIDA	
39	1801219243	BIRENDRA KUMAR SAHOO	
40	1801219244	BISWAJIT MOHANTY	

J. Mohapatra

Course Coordinator
(Signature with Seal)



COLLEGE OF ENGINEERING BHUBANESWAR (COEB)



A. Bhuje
PRINCIPAL
College of Engineering Bhubaneswar



ADD-ON COURSE ENROLLMENT SHEET

ON-LINE MODE

Name of the Department: Department of Mechanical Engineering

Course Title: Smart Manufacturing for Industry 4.0

Semester : 5th

Academic Year: 2020-21

Duration:

Student's Declaration/Undertaking

1. I do hereby undertake to participate in the above mentioned add on course.

2. I do hereby, promise to abide by the admissible rules and regulations, concerning discipline, attendance, etc. of the department, and also to follow the Code of Conduct prescribed for the students of the Institute, as in force from time to time.

Sl. No.	Registration No.	Name of the Student	Remarks by the Course Coordinator
41	1801219245	DEBASILPI PATTANAIK	Certified that the Enrollment Sheet is prepared by taking the consents of the students to enroll themselves in this Certificate Course (Add-On) to be conducted in Virtual Mode (ON-LINE) during the Pandemic COVID'19 through the link provided by the Department. They have also gone through the declaration/undertaking to be strictly abided by them during the course period.
42	1801219246	DEBASISH MALLICK	
43	1801219247	DEVENDRA GOI	
44	1801219248	DIGAMBAR BISWAS	
45	1801219249	DIGBIJAYA DAS	
46	1801219250	DILLIP KUMAR BARIK	
47	1801219251	DIPESH KUMAR SATPATHY	
48	1801219252	JITENDRA BEHERA	
49	1801219253	KAMALA GARANAYAK	
50	1801219254	KAMESHWAR MANDAL	
51	1801219255	KRISHNASISH BEHERA	
52	1801219256	PANKAJ KUMAR MOHANTY	
53	1801219257	PAPU BEHERA	
54	1801219258	PRADEEP KUMAR SETHY	
55	1801219259	PRAMOD KUMAR JENA	
56	1801219260	PRASENJIT MAITY	
57	1801219261	PRATIK KUMAR KAR	
58	1801219262	PRAVAT KUMAR MALLICK	
59	1801219263	RAGHUNATH KUMAR MAHTO	
60	1801219264	RAKESH BEHERA	
61	1801219265	RAKESH MAJHI	
62	1801219266	RAKESH RATH	
63	1801219267	RUPESH KUMAR MISHRA	
64	1801219268	SAJAL MAHAPATRA	

M. Mohapatra
Course Coordinator
(Signature with Seal)



A. Bhuje

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR (COEB)

DEPARTMENT OF MECHANICAL ENGINEERING

ONLINE MODE

ADD ON/CERTIFICATE COURSE
STUDENT ATTENDANCE SHEET

Academic Year: 2020-21

Programme: B Tech in MECHANICAL ENGINEERING


Semester : 5th Sem

Duration: 40 PDUs

Name of the Course: Smart Manufacturing for Industry 4.0

Remarks of Course Coordinator (P-Present, A-Absent)

Remarks

Sl.No.	Reg. No.	Name of the Students	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Remarks
1	1801219005	AMAN NIKHIL TOPNO	P	P	P	P	P	P	P	P	P	P	P	P	P	<p>The attendance is taken with the remarks P-Present and A-Absent for the students.</p> <p>Certified that this certified course is conducted in virtual mode (ONLINE) because of the pandemic COVID-19.</p> <p>J. Mohapatra Course Coordinator (Signature with Seal)</p> 
2	1801219009	ANKIT KUMAR NAYAK	P	P	P	P	P	P	P	P	P	P	P	P	P	
3	1801219019	ASHUTOSH BEHERA	P	P	P	P	P	P	P	P	P	P	P	P	P	
4	1801219032	BIKASH SAHA	P	P	P	P	P	P	P	P	P	P	P	P	P	
5	1801219034	BIPLAB ROUT	P	P	P	P	P	P	P	P	P	P	P	P	P	
6	1801219037	CHANDAN PARIDA	P	P	P	P	P	P	P	P	P	P	P	P	P	
7	1801219057	HAREKRUSHNA NAYAK	P	P	P	P	P	P	P	P	P	P	P	P	P	
8	1801219061	JASHOBANTA MUNDA	P	P	P	P	P	P	P	P	P	P	P	P	P	
9	1801219066	KHAGESWAR MALIK	P	P	P	P	P	P	P	P	P	P	P	P	P	
10	1801219067	KULDEEP KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	
11	1801219089	NIHAL PRAJAPATI	P	P	P	P	P	P	P	P	P	P	P	P	P	
12	1801219092	OMKAR RAMANUJA	P	P	P	P	P	P	P	P	P	P	P	P	P	
13	1801219095	PADMAN HARJAN	P	P	P	P	P	P	P	P	P	P	P	P	P	
14	1801219103	PRAVASINI MISHRA	P	P	P	P	P	P	P	P	P	P	P	P	P	
15	1801219106	PRIYABRATA BHUYAN	P	P	P	P	P	P	P	P	P	P	P	P	P	
16	1801219113	RAHUL KUMAR SETHI	P	P	P	P	P	P	P	P	P	P	P	P	P	
17	1801219114	RAHUL RAYIDAS	P	P	P	P	P	P	P	P	P	P	P	P	P	
18	1801219124	SALUKA SUNDI	P	P	P	P	P	P	P	P	P	P	P	P	P	
19	1801219126	SANDEEP KUMAR BEURA	P	P	P	P	P	P	P	P	P	P	P	P	P	
20	1801219128	SANJAYA SWAIN	P	P	P	P	P	P	P	P	P	P	P	P	P	
21	1801219134	SATYA BRATA ROUT	P	P	P	P	P	P	P	P	P	P	P	P	P	
22	1801219138	SAYUB ANSARI	P	P	P	P	P	P	P	P	P	P	P	P	P	
23	1801219143	SHRITAM PATRA	P	P	P	P	P	P	P	P	P	P	P	P	P	
24	1801219147	SK ZIAUDDIN	P	P	P	P	P	P	P	P	P	P	P	P	P	
25	1801219150	SOUBHAGYA RANJAN SAHU	P	P	P	P	P	P	P	P	P	P	P	P	P	
26	1801219157	SUBHRAJIT PATTNAYAK	P	P	P	P	P	P	P	P	P	P	P	P	P	
27	1801219167	SWAYAMSUBHAM PANDA	P	P	P	P	P	P	P	P	P	P	P	P	P	

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR (COEB)

DEPARTMENT OF MECHANICAL ENGINEERING

ADD ON/CERTIFICATE COURSE

STUDENT ATTENDANCE SHEET

ONLINE MODE

Academic Year: 2020-21

Programme: B Tech in MECHANICAL ENGINEERING

Duration: 40 hours

Name of the Course: Smart Manufacturing for Industry 4.0

Semester : 5th Sem

Remarks of Course Coordinator (P-Present, A-Absent)

Remarks

Certified that this certified course is conducted in virtual mode (ON-LINE) because of the pandemic COVID-19.

The attendance is taken with the remarks P-Present and A-Absent for the students.

Sl No.	Reg. No.	Name of the Students	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
28	1801219171	TUSHAR KUMAR SAMAL	A	P	P	P	P	P	P	P	P	P	P
29	1801219172	UPENDRA SAHU	P	P	P	P	P	P	P	P	P	P	P
30	1801219234	ABHISHEK PRABHUPAD	P	P	P	P	P	P	P	P	P	P	P
31	1801219235	ABINASH ABANI KUMAR	P	P	P	P	P	P	P	P	P	P	P
32	1801219236	ABINASH SETHY	P	P	P	P	P	P	P	P	P	P	P
33	1801219237	AKHILESH MISHRA	P	P	P	P	P	P	P	P	P	P	P
34	1801219238	AMIR HANZA	P	P	P	P	P	P	P	P	P	P	P
35	1801219239	ANKUSH KUMAR MOHANTY	P	P	P	P	P	P	P	P	P	P	P
36	1801219240	ATIK RAGIB KHAN	P	P	P	P	P	P	P	P	P	P	P
37	1801219241	BIHUNDENDU DAS	P	P	P	P	P	P	P	P	P	P	P
38	1801219242	BIDYUT KUMAR PARIDA	P	P	P	P	P	P	P	P	P	P	P
39	1801219243	BIRENDRA KUMAR SAHOO	P	P	P	P	P	P	P	P	P	P	P
40	1801219244	BISWAJIT MOHANTY	P	P	P	P	P	P	P	P	P	P	P
41	1801219245	DEBASILPI PATTANAIK	P	P	P	P	P	P	P	P	P	P	P
42	1801219246	DEBASISH MALLICK	P	P	P	P	P	P	P	P	P	P	P
43	1801219247	DEVENDRA GOI	P	P	P	P	P	P	P	P	P	P	P
44	1801219248	DIGAMBAR BISWAS	P	P	P	P	P	P	P	P	P	P	P
45	1801219249	DIGBHAJAYA DAS	P	P	P	P	P	P	P	P	P	P	P
46	1801219250	DILLIP KUMAR BARIK	P	P	P	P	P	P	P	P	P	P	P
47	1801219251	DIPESH KUMAR SATPATHY	P	P	P	P	P	P	P	P	P	P	P
48	1801219252	JITENDRA BEHERA	P	P	P	P	P	P	P	P	P	P	P
49	1801219253	KAMALA GARANAYAK	P	P	P	P	P	P	P	P	P	P	P
50	1801219254	KAMESHWAR MANDAL	P	P	P	P	P	P	P	P	P	P	P
51	1801219255	KRISHNASISH BEHERA	P	P	P	P	P	P	P	P	P	P	P
52	1801219256	PANKAJ KUMAR MOHANTY	P	P	P	P	P	P	P	P	P	P	P
53	1801219257	PAPU BEHERA	P	P	P	P	P	P	P	P	P	P	P
54	1801219258	PRADEEP KUMAR SETHY	P	P	P	P	P	P	P	P	P	P	P

J. Mahapatra
Course Coordinator
(Signature with Seal)



[Signature]

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR (COEB)

DEPARTMENT OF MECHANICAL ENGINEERING
ADD ON/CERTIFICATE COURSE
STUDENT ATTENDANCE SHEET

ONLINE MODE

Academic Year: 2020-21

Programme: B.Tech in MECHANICAL ENGINEERING

Duration: 40 HOURS

Semester : 5th Sem

Name of the Course: Smart Manufacturing for Industry 4.0

Sl No.	Reg. No.	Name of the Students	Remarks of Course Coordinator (P-Present, A-Absent)		Remarks of Course Coordinator (P-Present, A-Absent)		Remarks of Course Coordinator (P-Present, A-Absent)		Remarks of Course Coordinator (P-Present, A-Absent)		Remarks of Course Coordinator (P-Present, A-Absent)		Remarks of Course Coordinator (P-Present, A-Absent)		Remarks of Course Coordinator (P-Present, A-Absent)	
			Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
55	1801219259	PRAMOD KUMAR JENA	P	A	P	P	P	P	P	P	P	P	P	P	P	P
56	1801219260	PRASENJIT MATTY	P	P	P	P	P	P	P	P	P	P	P	P	P	P
57	1801219261	PRADEEP KUMAR KAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P
58	1801219262	PRAVAT KUMAR MALLICK	A	P	P	P	P	A	P	P	P	P	P	P	P	P
59	1801219263	RACHUNATH KUMAR MAHTO	P	P	P	P	A	P	P	P	P	P	P	P	P	P
60	1801219264	RAKESH BEHERA	P	P	P	P	P	P	P	P	P	P	P	P	P	P
61	1801219265	RAKESH MAJHI	P	P	P	P	P	P	A	P	P	P	P	P	P	P
62	1801219266	RAKESH RATH	P	A	P	P	P	P	P	P	P	P	P	P	P	P
63	1801219267	RUPESH KUMAR MISHRA	P	P	P	P	P	P	P	P	P	P	P	P	P	P
64	1801219268	SAJAL MAHAPATRA	A	P	P	P	P	P	P	P	P	P	P	P	P	P

Remarks

Certified that this certified course is conducted in virtual mode (ON-LINE) because of the pandemic COVID-19.

The attendance is taken with the remarks P-Present and A-Absent for the students.

S. Mahapatra
Course Coordinator
(Signature with Seal)



PRINCIPAL
College of Engineering Bhubaneswar

S. Mahapatra

[Handwritten Signature]

PRINCIPAL
College of Engineering Bhubaneswar

COLLEGE OF ENGINEERING BHUBANESWAR (COEB)



DEPARTMENT OF MECHANICAL ENGINEERING
ADD ON/CERTIFICATE COURSE
STUDENT ATTENDANCE SHEET

ONLINE MODE

Academic Year: 2020-21

Semester : 5th Sem

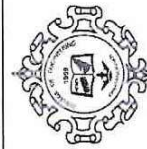
Programme: B.Tech in MECHANICAL ENGINEERING
Duration: 40 hours

Name of the Course: Smart Manufacturing for Industry 4.0

Sl No.	Reg. No.	Name of the Students	Remarks of Course Coordinator (P-Present, A-Absent)												Remarks
			Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	
28	1801219171	TUSHAR KUMAR SAMAL	A	P	A	P	A	P	A	P	A	P	A	P	Certified that this certified course is conducted in virtual mode (ON-LINE) because of the pandemic COVID-19.
29	1801219172	UPENDRA SAHU	P	P	P	P	P	P	P	P	P	P	P	P	The attendance is taken with the remarks P-Present and A-Absent for the students.
30	1801219234	ABHISHEK PRABHUPAD	P	P	P	P	P	P	P	P	P	P	P	P	
31	1801219235	ABINASH ABANI KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	
32	1801219236	ABINASH SETHY	P	P	P	P	P	P	P	P	P	P	P	P	
33	1801219237	AKHILESH MISHRA	P	P	P	P	P	P	P	P	P	P	P	P	
34	1801219238	AMIR HAMZA	P	P	P	P	P	P	P	P	P	P	P	P	
35	1801219239	ANKUSH KUMAR MOHANTY	P	P	P	P	P	P	P	P	P	P	P	P	
36	1801219240	ATIK RAGIB KHAN	P	P	P	P	P	P	P	P	P	P	P	P	
37	1801219241	BIBHUNDU DAS	P	P	P	P	P	P	P	P	P	P	P	P	
38	1801219242	BIDYUT KUMAR PARIDA	P	P	P	P	P	P	P	P	P	P	P	P	
39	1801219243	BIRENDRA KUMAR SAHOO	P	P	P	P	P	P	P	P	P	P	P	P	
40	1801219244	BISWAJIT MOHANTY	P	P	P	P	P	P	P	P	P	P	P	P	
41	1801219245	DEBASILPI PATTANAİK	A	P	P	P	P	P	P	P	P	P	P	P	
42	1801219246	DEBASISH MALLICK	P	P	P	P	P	P	P	P	P	P	P	P	
43	1801219247	DEVENDRA GOI	A	P	P	P	P	P	P	P	P	P	P	P	
44	1801219248	DIGAMBAR BISWAS	P	P	P	P	P	P	P	P	P	P	P	P	
45	1801219249	DIGBIJAYA DAS	P	P	P	P	P	P	P	P	P	P	P	P	
46	1801219250	DILIP KUMAR BARIK	P	P	P	P	P	P	P	P	P	P	P	P	
47	1801219251	DIPESH KUMAR SATPATHY	P	A	P	P	P	P	P	P	P	P	P	P	
48	1801219252	JITENDRA BEHERA	P	P	P	P	P	P	P	P	P	P	P	P	
49	1801219253	KAMALA GARANAYAK	P	P	P	P	P	P	P	P	P	P	P	P	
50	1801219254	KAMESHWAR MANDAL	P	A	P	P	P	P	P	P	P	P	P	P	
51	1801219255	KRISHNASISH BEHERA	P	P	P	P	P	P	P	P	P	P	P	P	
52	1801219256	PANKAJ KUMAR MOHANTY	P	A	P	P	P	P	P	P	P	P	P	P	
53	1801219257	PAPU BEHERA	A	P	P	P	P	P	P	P	P	P	P	P	
54	1801219258	PRADEEP KUMAR SETHY	P	P	P	P	P	P	P	P	P	P	P	P	

[Handwritten Signature]
Course Coordinator
(Signature with Seal)





COLLEGE OF ENGINEERING BHUBANESWAR (COEB)

DEPARTMENT OF MECHANICAL ENGINEERING
ADD ON/CERTIFICATE COURSE
STUDENT ATTENDANCE SHEET

ONLINE MODE

Academic Year: 2020-21

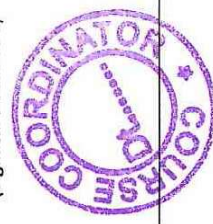
Programme: B Tech in MECHANICAL ENGINEERING		Semester : 5th Sem												Remarks
Duration: 40 hours		Name of the Course: Smart Manufacturing for Industry 4.0												
Sl No.	Reg. No.	Name of the Students	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	
55	1801219259	PRAMOD KUMAR JENA	P	P	P	P	P	P	P	P	P	P	P	P
56	1801219260	PRASENJIT MAITY	P	P	P	P	P	P	P	P	P	P	P	P
57	1801219261	PRATIK KUMAR KAR	P	P	P	P	P	P	P	P	P	P	P	P
58	1801219262	PRAVAT KUMAR MALLICK	A	A	A	A	A	A	A	A	A	A	A	A
59	1801219263	RAGHUNATH KUMAR MAHTO	P	P	P	P	P	P	P	P	P	P	P	P
60	1801219264	RAKESH BEHERA	P	P	P	P	P	P	P	P	P	P	P	P
61	1801219265	RAKESH MAJHI	A	A	A	A	A	A	A	A	A	A	A	A
62	1801219266	RAKESH RATH	P	P	P	P	P	P	P	P	P	P	P	P
63	1801219267	RUPESH KUMAR MISHRA	P	P	P	P	P	P	P	P	P	P	P	P
64	1801219268	SAJAL MAHAPATRA	P	P	P	P	P	P	P	P	P	P	P	P

Certified that this certified course is conducted in virtual mode (ON-LINE) because of the pandemic COVID-19.

The attendance is taken with the remarks P-Present and A-Absent for the students.

S. Mahapatra

Course Coordinator
(Signature with Seal)



K. Prady

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR

PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



Certificate of Completion

This is to certify that Mr./Ms. RAHUL KUMAR SETHI student of the Department

of Mechanical Engg. semester Fifth bearing registration number 1801219113

has successfully completed the ADD-ON Course titled Smart Manufacturing for Industry 4.0

conducted at College of Engineering Bhubaneswar in the academic year 2020-21.

TRUE COPY

f. Mahapatra

Course-Coordinator

Principal

R. Prusty

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



Certificate of Completion

This is to certify that Mr./Ms. RAHUL RAVIDAS, student of the Department

of Mechanical Engg. semester Fifth bearing registration number 1801219114

has successfully completed the ADD-ON Course titled Smart Manufacturing for Industry 4.1

conducted at College of Engineering Bhubaneswar in the academic year 2020-21.


PRINCIPAL

College of Engineering Bhubaneswar

TRUE COPY



Course-Coordinator



Principal



COLLEGE OF ENGINEERING BHUBANESWAR
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



Certificate of Completion

This is to certify that Mr./Ms. SALUKA SUNDI, student of the Department

of Mechanical Engg. semester Fifth bearing registration number 1801219124

has successfully completed the ADD-ON Course titled Smart Manufacturing for Industry 4.2

conducted at College of Engineering Bhubaneswar in the academic year 2020-21.

TRUE COPY

f. Mahapatra

Course-Coordinator

Principal

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR

PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



Certificate of Completion

This is to certify that Mr./Ms. SANDEEP KUMAR BEURA, student of the Department

of Mechanical Engg. semester Fifth bearing registration number 1801219126

has successfully completed the ADD-ON Course titled Smart Manufacturing for Industry 4.3

conducted at College of Engineering Bhubaneswar in the academic year 2020-21

TRUE COPY

g. Mohapatra

Course-Coordinator

Principal

S. Beura

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



Certificate of Completion

This is to certify that Mr./Ms. SANIYA SWAIN, student of the Department

of Mechanical Engg. semester Fifth bearing registration number 1801219128

has successfully completed the ADD-ON Course titled Smart Manufacturing for Industry 4.4

conducted at College of Engineering Bhubaneswar in the academic year 2020-21

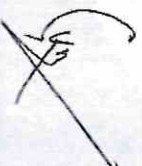


PRINCIPAL
College of Engineering Bhubaneswar,

TRUE COPY



Course-Coordinator



Principal