Training course outline

ITU and Advanced Level Telecom Training Centre

Title	Smart Manufacturing: Internet of Things, Artificial Intelligence, Digital Twins In Industry 4.0
Modality	Online instructor-led
Dates	22nd Aug– 02nd September 2022
Duration	2 Weeks
Registration deadline	19th August 2022
Training fees	100 USD per participant
Description	The focus of this Course is to create an proper understanding of State-of-the-art technologies such as the Internet of Things (IoT),Cloud Computing and artificial intelligence (AI) have greatly stimulated the development of smart manufacturing. An important prerequisite for smart manufacturing is cyber–physical integration, which is increasingly being embraced by manufacturers. As the preferred means of such integration, cyber–physical systems (CPS) and digital twins (DTs) have gained extensive attention from researchers and practitioners in industry 4.0 .Course is intended to design with view keep in mind that Emerging technology, such as Artificial intelligence, Digital Twins how changing the shape of Smart Manufacturing in Industry 4.0.
Code	22OI27825ASP-E

1. COURSE OBJECTIVES

To Develop an proper understanding Smart Manufacturing ,Role of AI, Digital Twins in Today's Smart Manufacturing Era. New-generation digitalized technology is enabling manufacturers to improve performance. Find out how Industry 4.0 financing tools play a significant role in helping manufacturers to unlock the potential of digitalization.

2. LEARNING OUTCOMES

Upon completion of this training, participants will be able to:
- Disruptive Technologies
- Smart Manufacturing Need and Analysis
- IoT & IIoT: Concept & Architecture

- Role of 5G in Smart Manufacturing
- Digital Twins in Industry 4.0
- Smart Factory: Concept &Frame Work
- Role of Data Analytics in Smart Manufacturing
- Quality 4.0
- Security Aspects in Industry 4.0

3. TARGET POPULATION

This training is primarily targeted at executives, managers, engineers and technical staff from regulators, policymakers, telecom operators, Executives involved in research work in smart manufacturing and role of Disruptive Technologies in Smart Manufacturing.

4. ENTRY REQUIREMENTS

Any Graduate/Diploma in Electronics, IT / Telecommunication, Electrical, Computer science and Electrical may apply for this course.

No Specific Qualification needed to join this course, participants who have prior knowledge of Industrial sector will be better understanding of topic.

5. TUTORS/INSTRUCTORS

Sr. No.	NAME OF TUTOR(S)/ INSTRUCTOR(S)	Position	CONTACT DETAILS
1.	Sh. Surya Kant	Chief General Manager, ALTTC, BSNL, Ghaziabad, India	cgm_alttc@bsnl.co.in cgmalttc@gmail.com + 911202755121
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3.	Sh. Mohan Singh	General Manager (Technical) ALTTC, BSNL, Ghaziabad, India	mohanbagrana2872@bsnl.co.in + 911202704638
4.	Dr. S K Srivastva	AGM(IT), ALTTC, BSNL Ghaziabad, India	sanjay.b224@bsnl.co.in +91 9415335814
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9.	Mr. Ajay Kumar	Telecom Engineer, ALTTC, BSNL Ghaziabad, India	ajay4384@gmail.com +91 94122 07588
10.	Mr. Rahul Sharma	Telecom Engineer, ALTTC, BSNL Ghaziabad, India	7hub.rs@gmail.com +91 78388 83843

6. TRAINING COURSE CONTENTS

The topics covered in this module are:

- (Module-I) : IoT
- (Module-II) : Smart Manufacturing & 5G in Industry 4.0

7. TRAINING COURSE SCHEDULE

Week	Module Title	Topics
1	Module 1: IoT	➢ IoT: Connected World & Data Driven Economy. ➢ IoT Concept & Architecture & Key Enablers in IIoT ➢ Industry 4.0 Introduction & Implementation ➢ Smart Manufacturing Concept. ➢ Smart Factory Concept and Use cases.
		Discussion / Forum
		Chat Session Quiz 1
2	Module 2: Smart Manufacturing & 5G in Industry 4.0	➢ Emerging Technologies in Smart Manufacturing ➢ (SDN,NFV, ,Edge Computing,Fog Computing) ➢ Artificial Intelligence in Industry 4.0 ➢ Power of Decentralisation in Industry 4.0: BlockChain in Industry 4.0. ➢ 5G in Industry 4.0 ➢ AI & Blockchain use cases in Industry 4.0
		Discussion / Forum
		Chat Session
		Quiz 2

8. METHODOLOGY (Didactic approach)

The Online program will include

- ➢ Instructor-led presentations by Industry experts and eminent speakers.
- ➢ Case studies,
- ➢ Online Group exercises/presentation
- ➢ Assignments
- ➢ Demos of Use-cases & Virtual Lab visits

9. EVALUATION AND GRADING

The assessment of the participants shall be based on the time spent on the training and the following parameters:

Evaluation Parameter	Weight
Quizzes and Presentations	60%
Attendance	10%

Participation	30%
Total Evaluation:	100%

The minimum passing requirement for certificate is 60%

10. TRAINING COURSE COORDINATION

Institute Head:	Training Coordinators:	ITU Coordinator:
Mr. Surya Kant Chief General Manager ALTTC, Raj Nagar, Ghaziabad, UP, INDIA -201002 cgm_alttc@bsnl.co.in cgmalttc@gmail.com +91 120 2755121 (Works) **Institute Coordinator:** **Mr. Mohan Singh** General Manager ALTTC, Raj Nagar, Ghaziabad, UP, INDIA -201002 mohanbagrana2872@bsnl.co.in (Email) +91 120 2704638 (Works) +91 9968658200 (Mobile)	**Training coordinators:** **Mr.P N Dohare** Sr. General Manager, ALTTC, BSNL, Ghaziabad, India doharepratap@gmail.com +91-9464444029 **Mr A K Jha** AGM (EB), Room No. 702, Admin Building , ALTTC , Raj Nagar, Ghaziabad(UP), INDIA - 201002 sdebd2010@gmail.com Tel: +919412739258	**Mr. Sean S. Doral** Program Officer-ITU, ITU Regional Office for Asia- Pacific 4th Floor NBTC Region 1 Building 101 Chaengwattana Road, Laksi, Bangkok 10210 THAILAND sean.doral@itu.int (Email) Tel: +66 2574 9326-8, +66 2 575 0055