

Demystifying Industry 4.0 Fundamentals

Skills and expertise to help you increase your knowledge in the field of digital technologies

About this workshop

Industry 4.0 smart factories are all about automation, machine learning, data exchange and using artificial intelligence in manufacturing technologies. It includes cyber-physical systems, the Internet of Things, cloud computing and cognitive computing.

Industry 4.0 Training course covers key concepts of future smart factories, the cyber-physical systems and physical processes within these factories and the virtualization techniques and intelligent decision-making capabilities which would support managers in leading these initiatives.



Industry 4.0 is the evolution to cyber-physical systems, representing the fourth industrial revolution on the road to an end-to-end value chain with Industrial IoT and decentralized intelligence in manufacturing, production, logistics and the industry.

Workshop details:

Unit 1 – Introduction to Industry 4.0

- What is Industry 4.0 and What Industry 4.0 really means.
- Evolution of Industry from 1.0 to 4.0.
- Industry 4.0 is a right fit or not.
- Six benefits of Industry 4.0 for businesses.
- Understanding Smart Factory.
- Six Principles of Smart Factory.
- What's the difference Between Industrial IoT and Industry 4.0?
- Obstacles stand in the way of Industry 4.0 implementation.
- Industry 4.0 Risks & Challenges.
- Industry 4.0 Readiness Assessment.
- Key Industry 4.0 Technologies.
- OEE Overall Equipment Effectiveness – A Performance Metric.

Unit 2 – Leadership Industry 4.0 Capabilities

- The Transformation Leaders has a Critical Role to play.
- Cybersecurity: security risks and solutions in the digital transformation age.
- Executives are struggling to develop effective strategies – The Big Challenge.
- Digital Transformation – What its all about?
- New challenges associated with Digital Transformation.
- What risks are stopping organizations to embark on DX.
- Understanding Digital Disruption.
- Customer Experience Management.
- How to create a good Customer Experience Strategy.
- Digital capabilities in an organization.
- Creating a digitally enabled organization.
- IoT (Internet of Things) Essentials and associated challenges.
- The Technology Factors.
- Industry 4.0 Technology Barriers and Requirements.
- Legislation of technological processes related to Technology Factors.
- PLC Systems and Industrial Control – Latest Industry 4.0 Developments.
- Skills that will be needed to face the Industry 4.0 revolution.

Unit 3 – Basic Building Blocks of Industry 4.0 Cyber-Physical Systems

- Futuristic port using Cyber Physical Systems for Industry 4.0.
- What is a Cyber-Physical System?
- CPS Two Folds – Cyber World & Physical World.
- Industry 4.0. Intelligent Production Environment.
- The Building Blocks of Industry 4.0 – CPS.
- Understand Multimodal User Interface.
- Cyber-Physical Systems Generic Architecture.
- Cyber-Physical Systems Application Fields.
- Cyber-physical systems: summary of the key characteristics.
- Key challenges associated with Cyber-Physical Systems.
- Protection layers offered by Cybersecurity & Industry 4.0.
- CPS as an Enabler – The Industry 4.0 View.
- Security Vs. Safety in a view.
- Cybersecurity and Cyberspace defined.
- Why is Cybersecurity important?
- Differences between InfoSec and Cybersecurity.
- Industry 4.0 and IIoT Connections.

Unit 4 – Fundamentals of Cloud Computing

- Cloud Computing Defined.
- Technologies that Enable Cloud Computing. Virtualization, Hypervisor, Provisioning, Orchestration, and Management.
- Understand three Cloud Service Models & their details.
- Describe Cloud four Deployment Models with Several Variations and their details.
- Clients are moving workloads to cloud.
- Application Readiness with respect to Cloud.
- Cloud solution to common IT problems & challenges.
- Common terms & phrases related to cloud solutions.
- Cloud Computing Reference Architecture – CCRA.
- Migration – Cloud migration from architecture through implementation.
- Vendors are helping their clients achieve compelling business outcomes.
- Cloud local and international market players.

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Target Audience

Business, application, audit, risk, compliance, information security, IT operations, project management, and legal professionals with a familiarity of basic IT/IS concepts who want to;

- learn Industry 4.0 and its overall capabilities.
- Key business building blocks of Industry 4.0..
- Technology fundamentals of Industry 4.0.
- Integral components of Industry 4.0 infrastructure including cloud computing, IIoT, AI, & Robotic Process Automation.



About the instructor

Training will be delivered by an experienced trainer with 25+ years of career experience imparting education and training services both locally and internationally and have served international enterprise technology vendors including IBM, Fujitsu, and ICL.

Our instructor holds various industry professional certifications in the space of enterprise servers and storage technologies, Information Security, Enterprise Architecture, ITIL, Cloud, Virtualization, Green IT, and a co-author of 10 IBM Redbooks.

The training course flow will be a mix of lectures & classroom discussions and videos so that participants can have a detailed understanding of various components and technologies used to combat against cyber attacks.

Unit 5 – Exploiting Industrial Internet of Things (IIoT)

- What is Internet of Thing – IoT and Major components of IoT.
- Understand how IoT and IIoT Works.
- Example of an IoT and IIoT system.
- What are Sensor based Data Acquisition Systems?
- IoT and IIoT – Hardware & Software.
- Basic Architecture of Internet of Things.
- IoT – Embedded Operating System and Supported Platforms.
- Top wireless technologies for IoT/IIoT & 5G networks.
- Exponential growth of IoT/IIoT.
- M2M Vs IoT – A Smart Comparison
- IoT disadvantages that you should know.
- IoT Market – Sizing the opportunity.
- Comparison between IoT and IIoT with respect to their applications.
- IoT/IIoT Device Management.
- Internet of Things - Common Uses and Applications.
- Why most IoT projects are unsuccessful.
- Ten best practices for securing the IoT/IIoT in your organization.
- What is slowing IIoT progress – Brief Summary.

Unit 6 – Exploring Artificial Intelligence

- What is Artificial Intelligence and their types.
- Elaborating Cognitive Computing & Cognitive Computing Framework.
- Rational Decisions from AI point of view.
- Rational Decision Making vs. Other Types of Decision Making.
- Foundational Building Blocks and Key Elements of AI.
- Building and understanding AI Capabilities.
- Building AI Capabilities in a business context.
- Strategy for executive leadership for AI Implementations.
- Operationalizing AI with Supporting Technologies.
- Identifying Opportunities – AI requires a vision to achieve.
- 7 critical challenges that need to be addressed by AI.
- Maturity of AI Applications across the Financial Industry.
- Areas of AI and Some Dependencies – Conclusion.
- A Brief history of Artificial Intelligence.

Unit 7 – Understanding Robotic Process Automation

- An Insight to Robotic and Intelligent Process Automation.
- Understand Robotic Process Automation (RPA).
- Doing versus Thinking – Process Driven Vs. Data Driven.
- Understanding screen scraping in RPA.
- Automation Capabilities supported by RPA.
- RPA Typical Business Processes.
- How does RPA Work and benefits and Applications of RPA.
- Key Business Process targets for RPA.
- Differentiation between AI and RPA.
- Use of RPA in different Industries.
- RPA Tools, types of RPA's and describe the Lifecycle of RPA.
- Challenges with implementing RPA.
- RPA Workflow.
- The 4 Critical Stages of Implementation.
- Differentiating Attended Robots and Unattended Robots collaborations.
- RPA: Keys to a Successful Implementation.
- RPA Development Life Cycle.
- Top RPA vendors and what to look for in RPA software.
- Challenges with implementing RPA.
- RPA Development Life Cycle.
- 5 Financial Processes you can automate with Robotic Process Automation.
- Intelligent Automation Framework.

Detail Information

Course Code	: TN213
Course Duration	: 3 Day Face-to-Face and Online Workshop
Course Location	: TLC, Customer On-site and Online.
Terms & Conditions	: 100% payment in advance.
Course Deliverable	: Comprehensive Student Guide and Course Certificate

For additional information, please write to us at: info@tlcpak.com

*Opportunities are made,
not found*