

Extended Reality (XR) in Industry Program



As part of the Industrial 4.0 Digital transformation initiatives, companies have evolved their capabilities thru introduction of digital technologies and capabilities. Industry 4.0 concepts are being introduced across the value chain from design, prototype, production to supply chain management.

With the advancement in Immersive technology, Augmented reality and Virtual reality concepts and technologies are being introduced as part of Digital Transformation efforts across Industries. Early adoption of AR/VR is being seen in Manufacturing Industries in the area of process optimization, digital data visualization, technical training, troubleshooting and repair, predictive and preventive equipment maintenance, safety and quality assurance.

The **Extended Reality in Workplace program** provides a structured approach towards the capability development of the workplace and the workforce in companies in understanding the transformation taking place in their respective industries and in identifying and implementing the right extended reality (AR/VR and MR) solution to support their workplace digital transformation efforts. The program covers four levels of capability development:

- Level 1: Awareness and Introduction to IIOT, the key concepts and General Introduction to Extended Reality and Industry application.
- Level 2: Business Application of Extended Reality solutions in workplace and exploration of enterprise XR solutions.
- Level 3: Specialised Training on specific XR enterprise solutions.
- Level 4: Development of XR solutions using game engine software platforms.

Digital readiness in Workplace 2 Days

This 2 days workshop enables the workforce to recognise the need to have a Growth mindset and the digital literacy skills needed to be ready and successful in the digital transformation efforts in the industry.

Course Objective

At the end of the workshop the learner will be able to

- Understand Digital disruption and the technological trends causing the change across the world, industries, country, society and self.
- Understand the changing workforce landscape and the new skills needed to be future ready
- Develop a GROWTH mindset and learn to embrace and manage change
- Understand the 4th Industrial Revolution and the Digital disruption and the impact to the sector.
- Understand the changes within the workplace and impact to current roles and emerging new role
- Identify and be equipped with the digital skills and knowledge to be future-ready, to be prepared for the evolving workplace changes.
- Identify technologies and business process improvement initiatives to support the digital adoption and transformation back at the workspace.

Course Outline

Day 1

- Need for Change: Understand the technological trends driving the Digital disruption.
- Future of Work : Understand the changing workplace and the future workforce.
- Transformation at the workplace: Industry and sector and the future of work and workforce
- Being Future Ready : Recognise the impact to current roles , need for change and identify skill sets to be future ready
- Growth Mindset : Develop a Growth mindset and create a plan of action.

Day 2

- Overview of Industrial 4.0
- IIOT Concepts in Industry : Remote collaboration, Data Visualisation, Process automation@Robotics, IoT ,Big Data/Data analytics, Artificial Intelligence,Cyber security
- Digital Skills : Digital Native or Digital Immigrant.
- Process improvement : Digital Lean principles at workplace .
- Call to Action

Duration : 2 Days

Target Audience : For PMETS and anyone involved in the Digital transformation efforts in the workplace.

Overview of Extended Reality in Industry 1 Day

This 1 day Overview workshop provides the learners an in-depth understanding of Immersive technology (augmented reality, virtual reality and mixed reality), its capabilities and help identify application in industries.

Course Objective

At the end of the workshop the learner will be able to

- State what is Immersive Technology and the differences between Virtual Reality, Augmented reality and Mixed reality
- Describe the evolution of Immersive Technology
- Explain the concept and working principles of AR/VR/MR technology.
- Identify different technologies and tools and their capabilities
- Explain the benefits and limitations of use.

Course Outline

Day 1

- Evolution of Immersive Technology
- Overview and working principles of Immersive Technology
- Understanding the Tools and technologies supporting Immersive Technology
- Technical specifications mapping of AR/VR and MR requirements
- Industry trends in Immersive technology
- Benefits and limitations of Immersive technology
- Hands on experience of generic tools and technologies.

Duration : 1 Day

Target Audience : For PMETS and anyone wanting to have an understanding and experience of Immersive technology for Industries.

Applying Extended Reality (XR) in Industry

This 2 days hands-on workshop introduces the learners to what is Immersive technology (augmented reality, virtual reality and mixed reality) and equip them with the knowledge and skills to manage AR/VR/MR applications at the workplace.

Course Objective

At the end of the workshop the learner will be able to

- State what is Immersive Technology and the differences between Virtual Reality, Augmented reality and Mixed reality
- Describe the evolution of Immersive Technology
- Explain the concept and working principles of Augmented reality technology.
- Identify different AR technologies and tools and their capabilities, benefits and limitations.
- State the business case and benefits of Augmented reality in workplace @IIOT
- Identify AR applications in manufacturing operations and work processes
- Recognise the considerations and limitation of AR applications at workplace.
- Develop an action plan on use of AR applications back at the workplace.

Course Outline

Day 1

- Evolution of Immersive Technology
- Overview and working principles of Immersive Technology
- Understanding the Tools and technologies supporting Immersive Technology
- Technical specifications mapping of AR/VR and MR requirements
- Industry trends in Immersive technology
- Benefits and limitations of Immersive technology

Day 2

- Industrial IOT Overview
- Use of Augmented reality in IIOT
- Use cases of AR/MR applications in sectors and industries
- Selection of AR/MR tools and technologies
- Hands on AR application using leading Industry solutions
- Back at the Job : AR application and Next Steps
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Duration : 2 Days

Target Audience : For PMETS in respective sectors.

Extended Reality in Workplace Business Planning for Managers ½ Day (Optional)

This ½ day working session for Managers enables learners to take a structured approach in identifying current state, readiness and provides the next steps in the business decision making process to identify the right solution for their workplace.

Prerequisite : Attended the Extended Reality in Workplace for PMETs 2 days workshop

Course Objective

At the end of the workshop the learner will be able to

- State the business case and benefits of Augmented reality in Workplace@IIOT
- Identify AR applications in manufacturing operations and work processes
- State the considerations and limitation to implement AR applications at workplace.
- Identify readiness of workplace for Mixed reality application.
- Identify the XR applications back at the workplace and develop an business opportunity plan as a next step.

Course Outline

- Review of XR in Workplace
- Readiness mapping of workplace
- Business requirement process for Mixed reality application
- Selection of AR/MR tools and technologies
- Back at the Job : AR application business planning and Next Steps
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Duration : ½ Day

Target Audience : For Managers and engineers who are responsible to implement XR in their workplace.

Application of Extended Reality in Workplace

This 2 day application based hands-on workshop enables a learner to take a structured approach in identifying and use of Augmented Reality solutions to support applications at the workplace.

This workshop includes an optional Day 3 for companies looking at exploring a Proof of concept of XR solutions against a business case within the workplace.

Course Objective

At the end of the workshop the learner will be able to

- Reinforce the business case and benefits of Augmented reality in Workplace@IIOT
- Identify different AR/MR applications in respective workplace
- Recognise the considerations and limitation of AR/MR applications at workplace.
- Setup and navigate use of leading AR/MR Head mounted devices (Hololens 2, Realwear, Lenovo Think Reality Smartglass A3/A6)
- Explore use of leading Augmented Reality solutions for specific use cases (Microsoft Dynamics 365 MR suites, Lenovo Think Reality, Taqtile Manifest suites, Hiverlab HUB)
- Demonstrate application of XR solutions using HMD devices.
- Develop an action plan on use of XR applications back at the workplace.

Course Outline

Day 1

- Review of AR/MR Enterprise solutions in Industry
- Review on the Tools and technologies supporting AR/MR
- Industry use case of AR/MR
- Benefits and limitations of AR/MR
- Setting up and navigating HMD Devices: Hololens 2,Lenovo A3/A6,Realwear
- Introduction to AR Enterprise solutions
- Introduction and hands on application of Hiverlab Hub

Day 2

- Introduction and hands on application of leading AR platform
- Microsoft Dynamics 365 MR suite (Remote assist, Guides)
- LenovoThink Reality Sphere Platform
- Manifest Taqtile
- Application of AR/VR at workplace using XR development and deployment framework.
- Back at the Job : AR application and Next Steps

Day 3 : (Optional)

- Proof Of Concept : Identification for a proof of concept project to demonstrate use case of XR solution

Duration : 2 Days

Target Audience : For PMETS in industries.