

Lean and Green Manufacturing through Digital Transformation

Entity Overview

	Company name	Location
Representative (Training provider)	Astra Bina Ilmu Foundation (Astra Polytechnic)	Jakarta, Indonesia
	Business overview	
	ASTRAtech (Astra Polytechnic) is a higher vocational education institution under the Astra Bina Ilmu Foundation, committed to developing highly skilled professionals through its ASTRAtech Dual System, which integrates academic learning with structured industrial training, supported by the Astra Group’s industrial ecosystem, ASTRAtech ensures strong industry alignment and global competitiveness. It offers Diploma 3 (D3) and Applied Bachelor (D4) programs, and also provides training, consulting, and competency certification to support human resource development both nationally and internationally.	
Partner organization	Lexer Research Inc., GreenCPS Consortium, Asuene Inc.	

Training Overview

Training site	ASTRAtech Cikarang Campus, Indonesia
Project period	29 th April 2025 – 31 st January 2026
Training period	2 days (12 hours) in total
Participation fee	IDR2,500,000/person
Language	English
Training features	1. Understanding of over all concept of HRD program 2. Exercise of DX part as participants 3. Exercise of DX part as lecturer 4. Understanding of production simulation for DX part 5. Exercise of GX 6. Rehearsal and examination
Target trainees	Minimum Position Level: <ul style="list-style-type: none">• Section Head• Supervisor• Or higher positions Notes: <ul style="list-style-type: none">• Targeting experienced staff managing sections like production lines in manufacturing or related fields.• Open to participants from various organizations, including general companies• Must be committed to operational efficiency and social impact.

Contents of Training

- Implement Pre-Production Kaizen (Front-Loading):** Introduce the concept of front-loading, which involves conducting Kaizen activities before the start of production. This proactive approach ensures that potential issues are addressed early, leading to a smoother production process with reduced waste and energy consumption, contributing to decarbonization and productivity improvement.
- Enhance Productivity through Cyber-Physical Production System Design:** Utilize advanced production simulation tools in a cyber-physical environment to design and optimize manufacturing systems. This digital transformation technique allows for precise modeling and adjustments, significantly improving productivity while minimizing environmental impact.
- Optimize Key Manufacturing Elements:** Focus on comprehensive improvements across multiple areas, including productivity, inventory efficiency, lead time reduction, labor performance, and production layout. The training emphasizes optimizing these elements to achieve maximum efficiency and sustainability, supporting the dual goals of productivity enhancement and carbon footprint reduction.
- Facilitate Informed Decision-Making for Total Optimization:** This course addresses the trade-offs between operational capabilities and investment costs by providing participants with methodologies for informed decision-making. It guides learners through the complexities of finalizing production system designs, ensuring that decisions are made with a clear understanding of their impact on productivity and environmental sustainability.

Expected Training Benefits

- 1.Innovative Transformation to Industry 4.0 through IoT Integration:**
- Participating companies will transition from legacy processes to modern Industry 4.0 standards by integrating advanced digital engineering methods, including the Internet of Things (IoT). This transformation will enable companies to connect and automate their production systems, enhancing data-driven decision-making and operational efficiency. The training follows ISO/CD 16400-5 standards for automation systems and integration in production system design and development, ensuring participants are equipped with the latest industry practices.
- 2.Significant Productivity Gains:**
- Companies can expect up to a 20% improvement in productivity across all production divisions. According to a study by Boston Consulting Group (BCG), integrating Lean practices with Industry 4.0 technologies, such as IoT, can lead to significant operational improvements, including a reduction in lead times by 30-50% and an increase in overall equipment effectiveness (OEE) by 10-20%. This course will equip participants with the tools and knowledge to achieve similar productivity gains through digital transformation.
- 3.Enhanced Engineering Capabilities:**
- The program will upskill participants in critical engineering areas, particularly in managing and optimizing IoT-integrated production systems. This enhancement in engineering expertise will empower companies to sustain long-term improvements and innovation in their manufacturing processes, making them more competitive in a rapidly evolving industry.

How to Apply for Training

Application made through email contact: sekeretariat@polytechnic.astra.ac.id