

Establishment Report: Astra Lean Production System Laboratory

1. Executive Summary

The Astra Lean Production System Laboratory (LPSL) is a premier educational and research facility established at the Faculty of Industrial Technology (FTI), Institut Teknologi Del. Formally inaugurated in September 2018, the laboratory bridges theoretical engineering concepts with practical, industry-standard lean manufacturing simulations. The project was driven by a collaborative academic effort to elevate the faculty to a national center of excellence in industrial engineering and technology management.



2. My Leadership and Contributions

As the Head of the Engineering Management Study Program, I (Devis Wawan Saputra) provided critical leadership, oversight, and execution throughout the laboratory's conceptualization and launch.

Project Management & Oversight:

- I defined the strict timeline and operational guidelines for both the educational modules and the physical facility designs.
- I oversaw the designated Persons in Charge (PICs), Niko Simamora and Hotma Sinaga, and held the authority to evaluate their performance based on their success in delivering the lab components.
- I actively enforced project deadlines and ensured all deliverables met the standards required for the study program.



Inauguration & Strategic Partnerships:

- During the official inauguration on September 8, 2018, I served as a primary VIP coordinator, guiding government and corporate delegates from the Open Theatre to the FTI Building.
- I co-led the official laboratory inspection, delivering the general explanation of the facility's capabilities to the VIP attendees.
- I was instrumental in the strategic corporate partnership, specifically tasked with drafting the Memorandum of Understanding (MoU) between PT Astra International and IT Del alongside Niko Simamora(PIC) and Vice Rector III.

3. Academic Integration and Scope

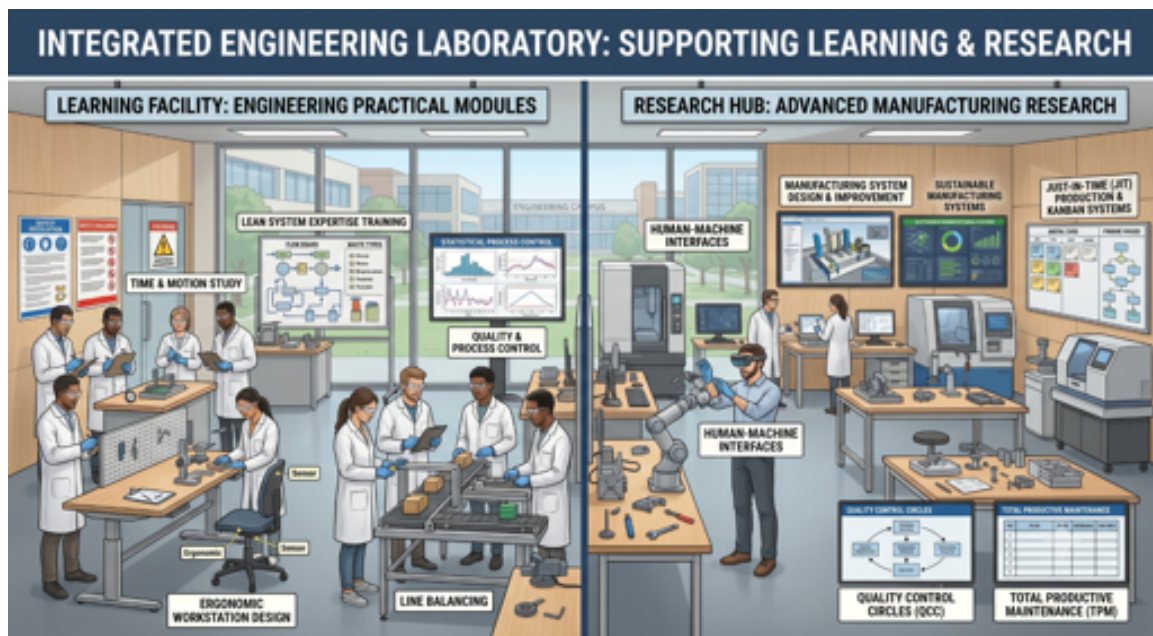
The laboratory was strategically designed to fulfill two primary academic functions within the faculty:

Learning Facility:

- It directly supports core engineering courses, specifically Production Planning and Control, Logistics Engineering, and Quality Engineering.
- Six practical training modules were developed under my oversight: Laboratory Safety Regulations, Time and Motion Study, Ergonomic Workstation Design, Line Balancing, Quality and Process Control, and Lean System Expertise Training.

Research Center:

- The facility acts as a research hub for both students and lecturers.
- Targeted research domains include Manufacturing System Design and Improvement, Human-Machine Interfaces, Sustainable Manufacturing Systems, Just-in-time (JIT) production, Kanban Systems, Quality Control Circles (QCC), and Total Productive Maintenance (TPM)



4. Facility Features and Layout

To accurately reflect modern industrial environments, the physical laboratory spans 150 to 200 square meters and features highly adaptable, modular technology.

- Production & Logistics: The lab includes modular assembly lines, ergonomic workstations, material handling systems (belt/roll conveyors), and a small-scale warehousing system simulating buffer stock.

- **Reconfigurability:** The entire system is modular, designed to be re-laid out in under 90 minutes to support varying production scenarios and cycle times.
- **Digital Integration:** Workstations are equipped with barcode readers and flat-screen monitors linked to a database for work instructions.
- **Real-Time Analytics:** A line-status monitoring screen allows students to track live metrics, including throughput, cycle times, workstation utilization, and accumulated work-in-progress (WIP).



5. Project Timeline and Milestones

The successful launch of the laboratory was the result of a highly regimented schedule executed throughout 2018:

- **March – May 2018:** Under my directive, the technical drafting phase took place, resulting in the completion of layout designs, Bill of Materials (BOM), workstation operational manuals, and the six core academic modules.
- **July 2018:** The physical laboratory was successfully assembled and underwent its initial trial usage phase.
- **August 8, 2018:** The Dean of the Faculty of Industrial Technology officially decreed the establishment of the Astra Lean Production System Lab.
- **September 8, 2018:** The laboratory was formally inaugurated, marked by a ribbon-cutting ceremony, a VIP lab inspection led by me, and the official MoU signing with PT Astra International.

PROJECT TIMELINE & MILESTONES: ASTRA LEAN PRODUCTION SYSTEM LAB – 2018

