

# **Astra Lean Production System Laboratory (Institut Teknologi Del) - Mini Case Study**

Role: Head of Department - led the initiative, coordinated with industry partner, delegated execution, and ensured delivery.

## **Problem**

Students learned production systems and lean concepts mainly in theory, with limited hands-on practice and little exposure to industry-style problem solving.

## **Approach**

As Head of Department, I led the end-to-end design and rollout of a practicum-based lean lab. I aligned stakeholders, translated Astra's shop-floor practices into teachable modules, delegated operational ownership to appointed lab leaders, and governed execution to ensure the lab went live and stayed sustainable.

## **What I built**

- Designed the practicum curriculum and module sequence: 5S/5R, waste identification, flow improvement, Kanban/JIT, and standardized work.
- Conducted an Astra site visit to benchmark real production routines and used the findings to define the lab format, physical layout, and simulation flow.
- Established the operating model: delegated day-to-day ownership by appointing a Lab Head and an Assistant, and set expectations, responsibilities, and handover routines.

## **Evaluation**

- Pre/post checks to measure lean understanding and practical skill demonstration.
- Rubric-based assessment of practicum deliverables (process maps, improvement proposals, standard work).
- Instructor observation and feedback loops during simulations to refine exercises and instructions.

## **Result**

- Students produced concrete lean artifacts and measurable process-improvement proposals during practicum sessions.
- Stronger apply-not-just-know capability in production systems topics through repeated simulation and reflection.
- A repeatable practicum structure and operating model that can be reused across cohorts.

## **Tools**

Lean toolkit (5S/5R, Kaizen, Kanban/JIT) - time study - process mapping - standard work - rubrics