



# AI for maintenance management

## Course goal

A hands-on course for maintenance and operations: every output the tool writes is checked against a source before it enters the work. Work orders, fault reports, preventive-maintenance instructions and risk surveys.

## Who it is for

- Mechanical technicians
- Mechanical and maintenance programmes
- Maintenance and operations staff in industry

## Prerequisites

A laptop or a phone with at least one AI tool. No prior AI knowledge is needed.

## Structure

- **Full course** 14 sessions × 2 hours
- One session a week, all in class. A 45-minute quiz without AI and a final project.

## The method: the verification gate

- Before: write down what I think, before asking.
- During: ask for a source for every detail. "Do not invent. Write missing."
- After: check every detail against a source. One unverified detail = everything stays a draft.

### 4 outcomes for every detail, no partial pass

Verified, matches the source: use it and record the source.

Cannot be verified: do not use it. The answer stays a draft.

Verified, a gap was found: fix it from the source and record what was fixed.

The tool wrote "missing": correct behaviour. Record it and continue.

## The sessions

| # | Topic                                   | Each participant leaves with                 |
|---|-----------------------------------------|----------------------------------------------|
| 1 | The work map and the engineering prompt | A work order and a prompt library            |
| 2 | Technical English                       | A decoding sheet for a manufacturer's manual |

| #  | Topic                             | Each participant leaves with                  |
|----|-----------------------------------|-----------------------------------------------|
| 3  | The machine file                  | A machine notebook and 10 checked questions   |
| 4  | Reading a drawing                 | A dimensions table and an error rate          |
| 5  | Field inspection                  | A photographed inspection report              |
| 6  | System schematics                 | An operating description and 3 errors found   |
| 7  | Supporting calculations           | A sheet with checked formulas                 |
| 8  | Fault report (RCA)                | An RCA report                                 |
| 9  | Preventive maintenance            | A work instruction and a PM plan              |
| 10 | Safety and standards              | A risk survey                                 |
| 11 | Procurement and confidentiality   | A specification and a supplier comparison     |
| 12 | Quiz without AI and final project | An alternatives chapter and an AI declaration |
| 13 | Agents and presentations          | An 8-minute presentation                      |

## Participant outcomes

- A portfolio with 3 verified deliverables
- A fault report (RCA) and a preventive-maintenance instruction
- An 8-minute presentation

## The instructor



**Mati Melchior · Registered mechanical engineer · MBA · Aeronautical mechanical technician**

Author of the verification gate method: a structured check of every output AI produces, before it is trusted. The method is published with DOI 10.5281/zenodo.22271340.

**For a group quote: [judgment.engineering/en/courses/maintenance-ai](https://judgment.engineering/en/courses/maintenance-ai) · WhatsApp 058-4887876**