ML1605 Industrial Maintenance and Reliability for Sustainable Production 6.0 credits

Industriell underhållsteknik och driftsäkerhet för hållbar produktion

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for ML1605 valid from Autumn 2024

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completing the course, the student should be able to:

- explain basic concepts and techniques in preventive maintenance - inspections, troubleshooting, and condition monitoring
- describe the different types of maintenance: corrective/preventive, operator maintenance/specialist maintenance, and when they are applied
- calculate the reliability of a technical system
- understand the relationship between maintenance strategies and overall sustainability of a technical system

Course contents

- explain the factors that affect availability and reliability
- characterize failures, their sources, and distribution patterns
- perform FMEA and RCM of a technical system
- select a maintenance strategy based on economic and technical feasibility
- assess the maintenance performance of equipment
- explain the fundamentals of continuous improvement
- analyze a technical system from a maintenance perspective
- explain the basics of metrological theory (knowledge of measurement techniques in different technical domains) as well as practical exercises
- conduct visual planning of maintenance
- use basic tools for systematic problem solving

Examination

- TEN1 - Written examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- INL1 - Assignment, reliability analysis, 1.5 credits, grading scale: P, F
- INL2 - FMEA Project, 1.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.