



MG2100 Scientific Methodology for Production Engineering 7.5 credits

Vetenskaplig forskningsmetodik inom industriell produktion

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

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

Establishment

Course syllabus for MG2100 valid from Spring 2020

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Admitted to the Master's programme (two-year) in Production Engineering (TPRMM) or the track Integrated Production Engineering in the Master's programme (two-year) in Industrial Engineering and Management (TIEMM IPIB)

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 with a passing grade the student should be able to:

- define and discuss the nature of the research in relation to the two main domains: scientific methodology and engineering design, outlining their importance and use in the context of production engineering
- present and discuss the evolution of thoughts from several aspects of the scientific domain such as definition, nature and progress of knowledge
- analyse a scientific text and review the research question, the method and the conclusions
- structure, carry out and document a research endeavour
- discuss the origin of the scientific method as result of the evolution of the human approach to the main philosophical problems, emphasizing the sociological and economic problems
- gather information and elaborate a strategy to qualify and defend an opinion on a controversial topic, and analyse and summarize the following debate

Course contents

Scientific theories
Problem formulation and delimitations
Experiments, models and validation methods
Research ethics
Production engineering as a science
Scientific papers and peer review

Course literature

Can be downloaded from the LMS by registered course participants

Examination

- LIT1 - Analysis of a scientific text, 1.5 credits, grading scale: P, F
- SEM1 - Active participation in seminars, 1.5 credits, grading scale: P, F
- TEN1 - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Debate Exercise, 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.

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.