



# ME2004 Research Methods in Industrial Engineering and Management 7.5 credits

Forskningsmetod inom industriell ekonomi

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

## Establishment

On 12/10/2024, Director of First and Second Cycle Education has decided to establish this official course syllabus to apply from spring term 2024 (registration number M-2024-1857).

## Grading scale

P, F

## Education cycle

Second cycle

## Main field of study

Industrial Management

## Specific prerequisites

Satisfies the requirements for a Degree of Bachelor

Achieved at least 45 credits from the Master's programme in Industrial Engineering and Management (TIEMM)

## Language of instruction

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

## Intended learning outcomes

The aim of this course is to deepen the knowledge of research methodology, with a special focus on the subject area of industrial engineering and management. The course develops the student's ability to carry out research projects and scientific studies for example degree project at master's level.

After passing the course, the students should be able to:

- Explain and reflect on scientific knowledge, different research traditions and research ethics.
- Apply both qualitative and quantitative research methods.
- Review scientific literature critically and formulate relevant research questions.
- Critically review and assess a scientific text with regard to its aim, methodological stringency, contribution, practical usability, as well as how it considers relevant sustainability aspects.
- Formulate a plan for a scientific study including well motivated method choices and assessment of ethical issues and sustainability aspects.

## Course contents

The course builds on the method knowledge that the student developed within the scope of the Bachelor thesis project. Certain course components are coordinated with and are connected to course components in ME2502 Change Project in Industrial Management. Special focus is set on giving each student extensive knowledge of how the he or she can exploit scientific methods and research results within academia as well as industry, with special focus on technology intensive activities. The course contains lectures, seminars and other learning activities within the following fields:

- Scientific knowledge, research traditions and research ethics
- Qualitative research methods
- Quantitative research methods
- Literature survey and formulation of research questions
- Presentation and critical review of scientific articles and other scientific studies
- Development of a proposal for a scientific study

## Examination

- INL1 - Assignment, 1.0 credits, grading scale: P, F
- INL2 - Assignment, 1.0 credits, grading scale: P, F

- SEM1 - Seminar assignment, 3.0 credits, grading scale: P, F
- PRO1 - Project, 2.5 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.

In agreement with the KTH coordinator for disabilities, it is the examiner who decides to adapt an examination for students in possession of a valid medical certificate documenting a disability. The examiner may permit other examination formats at the re-examination of individual students.

KTH program students who participate in official KTH exchange programs may, after consultation with examiner, complete the course assignments (or similar assignments) from abroad.

## Other requirements for final grade

Compulsory attendance on certain course components.

## 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.