



# ME2002 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

Course syllabus for ME2002 valid from Autumn 2017

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Industrial Management

## Specific prerequisites

Admitted to the Master's (120 credits) programme in Industrial engineering and management (TIEMM) school year 2, i.e. at least 150 credits from the degree programme in Industrial engineering and management (CINEK) year 1-3 and 45 credits from the Master's (120 credits) programme in Industrial engineering and management (TIEMM), should be completed.

# Language of instruction

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

## Intended learning outcomes

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

- Explain and apply different research traditions within the field of industrial engineering and management.
- Understand preconditions and framework for academic studies within the field of industrial engineering and management.
- Analyse and apply central terminology and concepts within research methodology within the field of industrial engineering and management.
- Critically analyse and assess the value and the reliability of empirical and theoretical studies with a focus on the benefits of the research for both academia and industry.
- Make assessments regarding ethical and sustainability aspects in ones own research and that of others.
- Critically and creatively identify and formulate research issues with usefulness in both academia and industry.
- Independently plan and investigate research issues with adequate choices of methods, within the field of industrial engineering and management.
- Understand and be able to apply qualitative and quantitative methods that used in e g case studies, questionnaires and laboratory experiment studies.
- Implement acquired knowledge in a practical investigation plan that satisfies requirements from both academia and industry

## Course contents

The course builds on the method knowledge within the field of industrial engineering and management that the student developed within the Bachelor thesis course (that are carried out within the specialisation of the student). 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:

- Theory of science, classification of research and research processes.
- Practical support for choice of subject for degree project, data collection (access to empiricism), project planning etc
- Design of investigation and study according to different scientific approaches.
- Qualitative and quantitative methods for collection and analysis of data.
- Examples of ongoing research within the field of industrial engineering and management.
- To critically review and analyse quality of scientific texts and articles.

- Discuss and critically review examples of degree projects and experiences from previous students and supervisor.
- To design and plan a degree project at the advanced level, including theoretical problem formulation of industrial problems and choices of method.
- Literature studies, source criticism, plagiarism, and arguing in writing for and identify his/her research gap.
- To be able to present and argue for an thesis proposal, both orally and in writing.

## Course literature

Book about evaluation methods for degree projects (be informed at the beginning of the course)

Book about research methodology (announced at the beginning of the course).

Selected research articles and compendiums.

6-8 international and Swedish journal articles.

Research databases: Google Scholar, Scopus, Web of Science

## Examination

- INL1 - Assignment, 2.0 credits, grading scale: P, F
- TEN2 - Exam 3.0, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- RAP2 - Report, 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.

## 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.