



# ME2001 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 ME2001 valid from Autumn 2016

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Industrial Management

## Specific prerequisites

Accepted to second year of Master program TINEM and passed ME2067.

## 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 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 key terminologies and concepts within research methodology within the field of industrial engineering and management.
- Critically review the state of the art literature and the empirical context of research projects
- Make assessments regarding ethical and sustainability aspects in 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 are 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 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.
- Research ethics

- To be able to design and present a thesis proposal, both orally and in writing.

## Disposition

The course activities consists of literature studies, seminars as well as other learning activities.

- Theory of science, classification of research and research processes.
- Learning activities encompasses both seminar group work as well as individual tasks, and includes both theoretical and practical moments such article search, comparative analysis, design of a thesis proposal, exercises in qualitative and quantitative data gathering methods.
- Feedback on assignments through mainly a peer review process at seminars and during lectures

## Course literature

Blomkvist, Pär and Anette Hallin: Metod för teknologer. Examensarbete enligt 4-fasmodellen/ Method for engineering students. Degree projects using the 4-phase Model, Studentlitteratur 2014/15

Collins, J. & Hussey, R. (2009). Business Research. A Practical Guide for Under- and Post-Graduates. Fourth edition. Palgrave.

Hansson Sven-Ove (2008) The art of doing science, KTH report.

6-8 International journal articles

Forskningsdatabaser som: Google Scholar, Scopus, Web of Science.

## Examination

- INL1 - Assignment, 2.0 credits, grading scale: P, F
- TEN2 - Exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- RAP1 - Report, 2.5 credits, grading scale: A, B, C, D, E, FX, 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.

## Other requirements for final grade

The course is examined through compulsory seminars and written tasks which total 7,5 hp.

The requirements for final grade are:

- Passing all hand-in assignments in the learning activities
- Active participation in mandatory seminars.
- Passing grade on thesis proposal.
- Passing the exam.

The final grade of the course is graded according to A-F scale and encompasses the weighed outcomes of the thesis proposal (RAP 1; weighted 40%) and final examination (TEN2).

## **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.