ME2001 Research Methods in Industrial Engineering and Management 7.5 credits

Forskningsmetod inom industriell ekonomi

Course syllabus for ME2001 valid from Autumn 17

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

**Grading scale:** A, B, C, D, E, FX, F

**Education cycle:** Second cycle

**Main field of study:** Industrial Management

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### 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.

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### Course main content

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

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

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

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


6-8 International journal articles

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

Examination

- INL1 - Assignment, 2.0 credits, grading scale: P, F
- RAP2 - Report, 2.5 credits, grading scale: P, F
- TEN2 - Exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F