ME2001 Research Methods in Industrial Engineering and Management 7.5 credits

Forskningsmetod inom industriell ekonomi

Course syllabus for ME2001 valid from Autumn 16

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

**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 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
- RAP1 - Report, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F

**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).