



## Course syllabus

Faculty of Technology

Department of Mechanical Engineering

2MT345 Vetenskapsmetodik och opponering, 7.5 credits  
Research methodology and opposition

**Main field of study**

Mechanical Engineering

**Subject Group**

Mechanical Engineering

**Level of classification**

First Level

**Progression**

G2F

**Date of Ratification**

Approved 2018-03-05

Revised 2020-09-23 by Faculty of Technology. Literature list is revised.

The course syllabus is valid from spring semester 2021

**Prerequisites**

120 credits within the programme Industrial Engineering and Management or the programme Mechanical engineering.

## Objectives

After this course students should be able to:

- Identify and formulate current research problems or questions
- Account for scientific concepts and methods that are applicable in the specific technological field
- Explain different parts of the research process
- Select research and data collection methods suitable for different types of research questions
- Describe and motivate research ethical and scientific aspects of a chosen research question and study design
- Orally and in writing present a research plan
- By oral and written opposition give constructive criticism of others' research plans.

## Content

The course consists of the following elements:

- Identification and formulation of research question and purpose
- Theory of science, scientific methods and research approaches
- The research process and research methodology
- Handling quality and truth criteria, and research ethics
- Written and oral presentation
- Constructive criticism in the form of opposition

## Type of Instruction

The teaching consists of lectures, seminars, exercises, and individual and/or group based work. Participation at seminars is mandatory.

## Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

The course is examined through oral presentation and discussion of the research plan (1 credit U/G), opposition on another research plan (1 credit U/G), and a written research plan (5,5 credit A-F).

All three parts must be approved to be approved in the course. The final grade of the course is obtained when all the moments are approved.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

## Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

## Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Certain parts of the course may result in costs incurred by the course participant.

## Required Reading and Additional Study Material

### Required reading

Blomkvist, Pär; Hallin, Anette. Method for engineering students. Studentlitteratur, Lund. Latest edition, 148 pages.

Schött, Kristina; Hållsten, Stina; Strand, Hans; Moberg, Bodil. Studentens skrivhandbok. Liber, Stockholm. Latest edition, 176 pages.

Säfsten, Kristina; Gustavsson, Maria. Research Methodology For Engineers and Other Problem-Solvers. Studentlitteratur, Lund. Latest edition, 300 pages.

### **Reference Literature**

Björklund, Maria; Paulsson Ulf. Seminarieboken Academic papers and theses. Studentlitteratur, Lund. Latest edition, 147 pages.

Patel, Runa; Davidson, Bo. Forskningsmetodikens grunder. Att planera, genomföra och rapportera en undersökning, Studentlitteratur, Lund. Latest edition, 149 pages.

Trost, Jan. Att vara opponert. Lund: Studentlitteratur AB. Latest edition, 85 pages.