# MF2018 Tribology 6.0 credits

**Tribologi**

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

## Establishment

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Specific prerequisites

A Bachelor´s degree in Mechanical Engineering or equivalent.

## Language of instruction

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

## Intended learning outcomes

After completing this course you will for different surfaces in contact be able to:

- calculate contact pressure, temperature and film thickness
- simulate wear
- measure friction and wear
- measure the surface topography
- identify the dominating surface damage mechanisms
- apply basic criteria for permissible contact pressure
- motivate a lubricant selection
- motivate a material and surface selection

## Course contents

The curriculum includes:

- Static and dynamic loaded contacts
- Surface topography
- Friction phenomena in mechanical systems
- Wear mechanisms in machine elements
- Wear simulation
- Selection of lubricant and lubration system
- Hydrodynamic-, boundary-, mixed- and elastohydrodynamic lubrication
- Surface damage mechanisms
- Material selection for tribological contacts

## Course literature

Anton van Beek, "Advanced engineering design lifetime performance and reliability" TU Delft 2006

Andersson "Dimensionering av några tribokontakter", Institutionen för Maskinkonstruktion KTH

## Examination

- INL1 - Hand in Tasks, 4.5 credits, grading scale: P, F
- TEN1 - Written examination, 1.5 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

To pass this course requires approved assignments (OVN1; 4,5hp) and approved written examination (TEN1;1,5hp).

## 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.