MF2018 Tribology 6.0 credits

Tribologi

Course syllabus for MF2018 valid from Autumn 09

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: Mechanical Engineering

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 main content

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

Language of instruction

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

Eligibility

Least 80 credits and

P: 5B1132/SF1618 ,5B1133/SF1619 , 4C1010/SE1010 , MF1039/MF1013/4F1813

M: 5B1132/SF1618 ,5B1133/SF1619 , 4C1010/SE1010 , MF1045/MG1003/4G1162

T: 5B1132/SF1618 ,5B1133/SF1619 , 4C1010/SE1010 , MF1015/4F1815

Literature

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

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

Examination

- TEN1 - Examination, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercise, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Requirements for final grade

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