

MJ2482 Measurement Techniques in Aeromechanics 6.0 credits

Mätteknik i aeromekanik

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

On 22/04/2022, the Dean of the ITM School has decided to establish this official course syllabus to apply from autumn term 2021 (registration number M-2022-0624).

Decision to discontinue this course

The course is discontinued at the expiration of the autumn semester 2023 according to a decision by the Dean of the ITM School : M-2022-0624. Decision date: 22/04/2022. The course is given for the last time during autumn semester 2021. Final opportunity for examination will be given during autumn semester 2023.

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Fluid mechanics, thermodynamics, engineering mathematics, BSc level

Only for TAETM

Language of instruction

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

Intended learning outcomes

After completing the course with a passing grade the student should be able to:

- 1. Develop an experiment plan
- 2. Present measurement result with measurement uncertainty
- 3. Describe measurement principles of measurement of temperature, pressure and flow and be able to choose appropriate experimental equipment for the measurement purpose
- 4. Describe measurement principles of unsteady measurements of pressure and vibrations and be able to choose appropriate experimental equipment for the measurement purpose
- 5. Condense time-resolved measurements and extract relevant results

Course contents

The course intends to give an overview of measuring techniques that are used in the field of aeromechanics and the research area with regard to new and future methods of measurement.

In several engineering projects, more or less complex tests are carried out. To set up experiment concepts, plan instrumentation, carry out measurements and evaluate measurement results are crucial stages in that. To be able to guarantee high quality of measurement results, the planner must know advantages and disadvantages of different technologies to be able to choose the most suited the technology within budgetary limits.

Examination

- INL1 Assignment1, 0.5 credits, grading scale: P, F
- INL2 Assignment2, 0.5 credits, grading scale: P, F
- LAB1 Laboratory exercise 1, 0.5 credits, grading scale: P, F
- LAB2 Laboratory exercise 2, 0.5 credits, grading scale: P, F
- TEN1 Written exam 1, 2.0 credits, grading scale: A, B, C, D, E, FX, F

• TEN2 - Written exam 2, 2.0 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.

Obsolete examination items will be assessed using supplementary tasks or complementary assignments during three years of time after the last course offering. Thereafter, the examination items according to the current official course syllabus, must be carried out.

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.