

## Aircraft Aerodynamics - Project Course

Aircraft Aerodynamics - Project Course

6 credits

Programme course

TMMV26

Valid from: 2022 Spring semester

|                                                        |                                                  |                                   |
|--------------------------------------------------------|--------------------------------------------------|-----------------------------------|
| <b>Determined by</b>                                   | <b>Main field of study</b>                       |                                   |
| Board of Studies for Mechanical Engineering and Design | Aeronautical Engineering, Mechanical Engineering |                                   |
| <b>Date determined</b>                                 | <b>Course level</b>                              | <b>Progressive specialisation</b> |
| 2021-09-01                                             | Second cycle                                     | A1X                               |
| <b>Revised by</b>                                      | <b>Disciplinary domain</b>                       |                                   |
|                                                        | Technology                                       |                                   |
| <b>Revision date</b>                                   | <b>Subject group</b>                             |                                   |
|                                                        | Mechanical Engineering                           |                                   |
| <b>Offered first time</b>                              | <b>Offered for the last time</b>                 |                                   |
| Autumn semester 2020                                   |                                                  |                                   |
| <b>Department</b>                                      | <b>Replaced by</b>                               |                                   |
| Institutionen för ekonomisk och industriell utveckling |                                                  |                                   |

## Course offered for

- Master of Science in Mechanical Engineering
- Master's Programme in Aeronautical Engineering

## Entry requirements

This course concludes a master profile for the M and AER program and it is required that the student has already passed the preparatory profile courses. Prior to the start of the course, the examiner/director of studies will verify that participating students have sufficient knowledge, see information under Prerequisites.

## Prerequisites

Aerodynamics basic and advanced courses, Computational fluid dynamics basic and advanced, Engineering Systems Design, Aircraft conceptual design, Prototype Realization - project course.

## Intended learning outcomes

The aim of the course is to developing skills for making an integrated aerodynamic analysis of an aircraft concept. After completing the course the students will

- be able to transform a conceptual design into a model for an aerodynamic analysis, and for design refinement.
- have knowledge about using CFD tools for aerodynamics.
- be able to define design cases for aerodynamic analysis.
- be able to analyze and present the results from the analysis in a scientific way
- have skills to plan and conduct the work efficiently.

## Course content

Theory and methodology from previous courses are used to conduct an aerodynamic analysis of a concept. Improvements are evaluated and proposed. Planning and time management in order to deliver results on time.

## Teaching and working methods

The course is carried out as a project with regular meetings. In addition there can be lectures in project specific technology when needed. The result from the project is a design of product presented orally and in a written report.

## Examination

PRA1          Project work          6 credits          U, G

## Grades

Two-grade scale, U, G

## Other information

### About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.

### Other

The course is conducted in a manner where both men's and women's experience and knowledge are made visible and developed.

The planning and implementation of a course should correspond to the course syllabus. The course evaluation should therefore be conducted with the course syllabus as a starting point.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.