



# SD2222 Vehicle Components

## 8.0 credits

### Fordonskomponenter

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

The course syllabus is valid from Spring 2022 according to the school principal's decision:  
S-2022-0529 Decision date: 2022-02-24

### Grading scale

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

### Education cycle

Second cycle

### Main field of study

### Specific prerequisites

SD1230 Project Course in Vehicle Engineering

or

SD2224 Vehicle Systems for a Better Environment

English B / English 6

## Language of instruction

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

## Intended learning outcomes

To acquire basic knowledge of ground vehicle components and their functions, including modelling, validation and analysis.

Students graduating from the course should be able to:

- describe the main components of ground vehicles and their function
- explain how the main components in the power train, suspension system and brake system interacts
- perform calculations of the start, acceleration and retardation event of a vehicle and it's climbing capabilities
- perform calculations of the brake force distribution and construct and analyse a friction utilisation diagram
- derive the lateral force and aligning moment of a tire by using the brush model
- perform calculations of the suspension characteristics for wheel suspension components
- apply the gained knowledge regarding analysis of vehicle performance

## Course contents

Tires and tire forces. Powertrain components. Brake systems. Wheel suspensions. Steering systems. Chassis and body.

## Examination

- INL1 - Assignments, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 6.0 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.

## Other requirements for final grade

Written examination (TEN1; 6 university credits).

Approved exercises (ÖVN1; 2 university credits)

## 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.