



SD2221 Fordonssystemteknik

8,0 hp

Vehicle System Technology

Fastställande

Kursplan för SD2221 gäller från och med HT18

Betygsskala

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

Utbildningsnivå

Avancerad nivå

Huvudområden

Maskinteknik

Särskild behörighet

Fundamentals of mechanical and electrical engineering.

For "single course students": **150 university credits (hp) In engineering or natural sciences and documented proficiency in English corresponding to English B.**

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

This introductory course will give you knowledge of vehicle system technology, and the vehicles role in the transport system and in society.

The aim of the course is to give the student a basic knowledge on road and rail vehicle design and performance.

After a completed course you should be able to:

- formulate problems and apply the methodology in the vehicle sector to seek and evaluate solutions
- apply knowledge and skills acquired during the studies, on problems in vehicle technology
- describe vehicles role in transportation
- describe vehicle types, structure, use and requirements
- describe vehicle systems, sub-systems and their function
- describe how vehicles effect the environment on local, regional and global level
- describe vehicle forces and its relation to weight, air resistance, rolling resistance, etc.
- calculate start, acceleration and retardation of vehicles,
- have basic knowledge on vehicle dynamic performance and comfort,
- describe vehicle development from a systems engineering perspective, from market, to requirements and product development. Innovations and patents.
- discuss the trends and future potential of vehicles

Kursinnehåll

Vehicle types, structure, use and demands. Vehicles role in transportation. Requirements for vehicles. Wheels, tires and rolling resistance. Brakes. Innovations and patents. Drivetrain. Chassis. Rail vehicles. Terminals and signalling. Vehicle-track interaction. Statistical design of experiments. Vehicle dynamics and comfort. Traction Technology, energy and environment. Future trends.

Kurslitteratur

Course literature will be available in BILDA by Div. of Vehicle Dynamics and Div. of Rail Vehicles, KTH.

Examination

- INL2 - Inlämningsuppgift, 4,0 hp, betygsskala: P, F
- TEN1 - Tentamen, 4,0 hp, betygsskala: A, B, C, D, E, FX, F

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Övriga krav för slutbetyg

Written Exam (TEN1; 4 hp; A/F), compulsory.

Exercises (ÖVN1; 4 hp; A/F), compulsory.

The number of points achieved for TEN1 and ÖVN1 are summed. The final grade is based on this sum.

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.