

Road Vehicle Dynamics

Programme course

6 credits

Markfordonsmekanik

TMME11

Valid from: 2017 Spring semester

Determined by
Board of Studies for Mechanical
Engineering and Design

Date determined
2017-01-25

Main field of study

Aeronautical Engineering, Mechanical Engineering

Course level

Second cycle

Advancement level

A1X

Course offered for

- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering
- Mechanical Engineering, Master's programme

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Basic courses in mechanics.

Intended learning outcomes

The course aims at giving the student knowledge about the chassis components of road vehicles, and how the motion of road vehicles may be simulated. Upon completion of the course, the student should be able to:

- Create and analyze simpler mechanical models of road vehicles.
- Describe factors that affect vehicle behavior.
- Determine how changes in these factors affect vehicle behavior in quantitative as well as qualitative terms.
- Describe the design and function of common wheel suspensions.

Course content

Tire mechanics. Wheel suspensions. Longitudinal motion: acceleration, braking, aerodynamics. Vertical motion: springing, shock absorbers. Lateral motion: steering systems, cornering maneuvers.

Teaching and working methods

Teaching is in the form of lectures, classes and computer exercises.

Examination

UPG2 Assignments 6 credits U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Peter Schmidt

Examiner

Peter Christensen

Course website and other links

Education components

Preliminary scheduled hours: 56 h

Recommended self-study hours: 104 h

Course literature

Utdelat material

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.