Vak: Drivetrain Engineering — credits: 5

Vakcode	WBVB24DRE
Naam	Drivetrain Engineering
Studiejaar	2026-2027
ECTS credits	5
Taal	Engels
Coördinator	B. Heikema
Werkvormen	Onderwijs
Toetsen	Drivetrain Engineering - Opdracht

Leeruitkomsten

The student:

- solves kinematic problems of particles or rigid bodies, involving displacement, velocity, and acceleration, by using the relevant kinematic equations
- solves kinetic problems of particles or rigid bodies, involving forces and moments, by using the relevant equations of motion or the "principle of work and energy"
- calculates the required mechanical power and energy losses of a driven system
- translates the properties of a driven system into a load characteristic and selects an AC-motor based on information of the load characteristic and the desired speed and calculates the power consumption and efficiency
- translates a given three dimensional statically loaded assembly into schematic representations and Free Body diagrams (FBD) of the individual parts and determines the external and internal loads of the parts for statically determined and undetermined cases
- optimises the cross-sectional area of a three-dimensional loaded part (F.e. shaft) by fulfilling strength and stiffness requirements

Inhoud

Various mechanical devices use moving parts to perform their functions. Product development then requires insight into kinetics, strength, stiffness, stability and specifying/selecting suitable machine parts. During this module, topics range from:

- modelling and quantifying loads, accelerations and velocities;
- energy/power requirements;
- Strength, stiffness and stability analyses;
- selecting AC motors with appropriate gear ratios.

Opgenomen in opleiding(en)

Werktuigbouwkunde 3 jarige VWO route

School(s)

Engineering, Life Sciences & ICT

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