Vak: Human Dynamics — credits: 5

Vakcode	ELVH20GHD
Naam	Human Dynamics
Studiejaar	2024-2025
ECTS credits	5
Taal	Engels
Coördinator	B.D. Williams
Werkvormen	Hoorcollege Practicum / Training
Toetsen	Human Dynamics - Schriftelijk, organisatie ToetsCentrum

Leeruitkomsten

Students learn to understand the differences between laminar and turbulent flows of liquids (mainly blood) through tubes. Students learn the importance of various flows which occur in the body and can make calculations involving blood and air flows.

The student knows:
- fundamentals of viscosity in flow;
- laminar flow / turbulent flow;
- Bernoulli’s law and losses in tubes;
- implications of laminar and turbulent flow for Bernoulli’s la;
- velocity profiles for flow in tubes;
- importance of different fluid flows within the human body;
- interactions of biomaterials within the body / fluid flows.

Biomechanics

Biomechanics is the analysis of human movement to enhance performance, improve training, accelerate rehabilitation, and reduce injury risk. This is done by integrating various mechanical aspects of human movement during static and dynamic activities.

Students are able to:
- apply anatomical terminology;
- describe general mechanical properties of bodily tissues;
- explain (models of) visco-elasticity;
- explain the mechanical behaviour of bone, articular cartilage, tendons, ligaments, muscles and neural tissue;
- apply biomechanics to the knee and hip joints;
- apply mechanical principles to human movement or to maintaining a posture
- Have basic knowledge of biomaterials.

Inhoud

Fluid dynamics
Students learn to understand the differences between laminar and turbulent flows of liquids (mainly blood) through tubes. Students learn, by mathematical modeling and exercises, to apply this knowledge in a design project.
Biomechanics
Biomechanics is the analysis of human movement to enhance performance, improve training, accelerate rehabilitation, and reduce injury risk. This is done by integrating various mechanical aspects of human movement during static and dynamic activities.

Opgenomen in opleiding(en)

Exchange Biomedical Engineering (autumn)
Minor Biomedical Engineering

School(s)

Instituut voor Engineering

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