Course: Materialisation & Dimensioning I — credits: 5

Course code	WBVP24MD1
Name	Materialisation & Dimensioning I
Study year	2026-2027
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	M.J. Kroes
Modes of delivery	Education
Assessments	Material Science - Written, organised by STAD examinations Strengths Learning - Written, organised by STAD examinations

Learning outcomes

The student:

- describes the relationship between the material properties of metals and their structure
- describes material properties and applies them when sizing product componentscCalculates internal loads using a 2D-FEA (Finite Element Analysis)
- calculates internal loads using a 2D-FEA
- determines the most heavily loaded cross-section(s) and calculates the resulting theoretical stress, comparing it to the allowable stress
- creates a calculation report where the calculations/modeling are linked to the real-life situation.

Content

In this module, the student is introduced to metals and their material properties. For simple situations, the student can isolate components and calculate the resulting theoretical stress for these components, verifying whether the stress is permissible. Additionally, the student learns how such calculations should be documented.

Included in programme(s)

Mechanical Engineering

School(s)

Engineering, Life Sciences & ICT

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