

## Course: Applied Mechanics I

credits: 4

<b>Course code</b>	WBVP17AM1	<b>Modes of delivery</b>	Education
<b>Name</b>	Applied Mechanics I	<b>Assessments</b>	Applied Mechanics I - Written, organised by STAD examinations
<b>Study year</b>	2022-2023		
<b>ECTS credits</b>	4		
<b>Language</b>	English		
<b>Coordinator</b>	J.T. Hofman		

### Learning outcomes

After finishing this module the student:

- translates a given 2-dimensional statically loaded product into a schematic representation and translates this schematic representation further into Free Body Diagram (FBD)
- determines the unknown external loads by applying the three laws of equilibrium in a structured manner
- determines the internal loads of a construction using the method of sections
- calculates internal stresses from the internal loads using a set of given relations
- optimises the cross-sectional area of a given prismatic shaped beam using a set of given relations by comparing the maximum internal stress to the maximum stress acceptable by the material

### Content

All products around us have been designed to fulfill certain requirements. In many cases, the dominant design aspects are related to strength requirements. In this course (4 EC), the student will learn to translate external loads into internal loads and stresses. Furthermore, the student will learn how to optimize product dimensions with respect to stresses. Analyses of given practical situations will be performed in a structured manner.

### Included in programme(s)

Mechanical Engineering VWO a 3-year variant

### School(s)

Institute of Engineering

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