



# University of Pretoria Yearbook 2022

## Structural design 227 (MOW 227)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Engineering, Built Environment and Information Technology</a>
<b>Module credits</b>	16.00
<b>NQF Level</b>	06
<b>Programmes</b>	<a href="#">BEng (Mechanical Engineering)</a> <a href="#">BEng (Mechanical Engineering) ENGAGE</a>
<b>Prerequisites</b>	SWK 122
<b>Contact time</b>	3 lectures per week, 4 tutorials per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mechanical and Aeronautical Engineering
<b>Period of presentation</b>	Semester 2

### Module content

Analyse statically determinate structures to obtain section forces and moments and stress distributions. Axial loading, pure shear, torsion and bending. Stress and strain transformations. Derivation of stress transformation equations. Mohr's circle. Failure criteria. Fatigue strength design. Introduction to code design, safety factors. All analysis techniques are applied to the open-ended design of hoisting systems and ropes, symmetric beams, shafts, springs, bolts and welds.

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