

University of Pretoria Yearbook 2018

Structural design 227 (MOW 227)

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| Qualification | Undergraduate |
| Faculty | Faculty of Engineering, Built Environment and Information Technology |
| Module credits | 16.00 |
| Programmes | BEng Mechanical Engineering BEng Mechanical Engineering ENGAGE |
| Prerequisites | SWK 122 |
| Contact time | 3 lectures per week, 4 tutorials per week |
| Language of tuition | Separate classes for Afrikaans and English |
| Department | Mechanical and Aeronautical Engineering |
| Period of presentation | Semester 2 |

Module content

Analyse statically determinate structures to obtain section forces and moments and stress distributions. Thin-walled pressure vessels. Stress and strain transformations. Introduction of stress tensor. Derivation of stress transformation equations. Eigenvalue/vector analysis for principle stresses and strains. Mohr's circle. Failure criteria. Fatigue strength design. All analysis techniques above are applied to the open-ended design of components like beams and shafts.

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