



# University of Pretoria Yearbook 2019

## Mechanics 122 (SWK 122)

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| <b>Qualification</b>       | Undergraduate   |
| <b>Faculty</b>             | Faculty of Engineering, Built Environment and Information Technology  |
| <b>Module credits</b>      | 16.00   |
| <b>Programmes</b>          | BEng Chemical Engineering<br>BEng Chemical Engineering Engage<br>BEng Civil Engineering<br>BEng Civil Engineering Engage<br>BEng Computer Engineering<br>BEng Computer Engineering Engage<br>BEng Electrical Engineering<br>BEng Electrical Engineering Engage<br>BEng Electronic Engineering<br>BEng Electronic Engineering Engage<br>BEng Industrial Engineering<br>BEng Industrial Engineering Engage<br>BEng Mechanical Engineering<br>BEng Mechanical Engineering Engage<br>BEng Metallurgical Engineering<br>BEng Metallurgical Engineering Engage<br>BEng Mining Engineering<br>BEng Mining Engineering Engage<br>BSc Engineering and Environmental Geology<br>BSc Extended programme - Physical Sciences<br>BSc Meteorology |
| <b>Service modules</b>     | Faculty of Natural and Agricultural Sciences  |
| <b>Prerequisites</b>       | WTW 158   |
| <b>Contact time</b>        | 4 lectures per week, 2 tutorials per week   |
| <b>Language of tuition</b> | Module is presented in English  |



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**Department** Civil Engineering

**Period of presentation** Semester 2

**Module content**

Equivalent force systems, resultants. Newton's laws, units. Forces acting on particles. Rigid bodies: principle of transmissibility, resultant of parallel forces. Vector moments and scalar moments. Relationship between scalar and vector moments. Couples. Equivalent force systems on rigid bodies. Resultants of forces on rigid bodies. Equilibrium in two and three dimensions. Hooke's law. Trusses and frameworks. Centroids and second moments of area. Beams: distributed forces, shear force, bending moment, method of sections, relationship between load, shear force and bending moment.

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