

University of Pretoria Yearbook 2018

Structural mechanics 310 (MSY 310)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEng Mechanical Engineering BEng Mechanical Engineering ENGAGE
Prerequisites	MOW 227, WTW 256
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Mechanical and Aeronautical Engineering
Period of presentation	Semester 1

Module content

Statically determinate force systems. Statically determinate stress systems. Stress-strain relations. Statically indeterminate stress systems. Torsion. Bending stress, slope and deflection. Statically indeterminate beams. Energy methods. Buckling instability. Stress and strain transformations. Experimental strain measurements. Yield criteria and stress concentration. Elementary plasticity. Fracture mechanics. Fatigue. Variation of stress and strain. Thick-walled cylinders.

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