University of Pretoria Yearbook 2016

Structural mechanics 310 (MSY 310)

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

Module content

Statistically determinate force systems. Statistically determinate stress systems. Stress-strain relations. Statistically indeterminate stress systems. Torsion. Bending stress, slope and deflection. Statistically 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.