



University of Pretoria Yearbook 2017

Solid mechanics 321 (MKM 321)

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
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Academic organisation	Mechanical and Aeronautical En
Period of presentation	Semester 2

Module content

Introduction to continuum mechanics. Kinematics of deformation and the strain tensor. Lagrangian and Eulerian descriptions. The stress tensor and equilibrium equations. Hooke's law for isotropic media. Strong form of Boundary Value Problem (BVP) of solid mechanics. Weak form of BVP of solid mechanics. Derivation of finite element equations using weighted residuals. Development of 2D elements.

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