University of Pretoria Yearbook 2022

Statics 122 (SWK 122)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	05
Programmes	BEng (Mechanical Engineering)
	BEng (Chemical Engineering)
	BEng (Chemical Engineering) ENGAGE
	BEng (Civil Engineering)
	BEng (Civil Engineering) ENGAGE
	BEng (Computer Engineering)
	BEng (Computer Engineering) ENGAGE
	BEng (Electrical Engineering)
	BEng (Electrical Engineering) ENGAGE
	BEng (Electronic Engineering)
	BEng (Electronic Engineering) ENGAGE
	BEng (Industrial Engineering)
	BEng (Industrial Engineering) ENGAGE
	BEng (Mechanical Engineering) ENGAGE
	BEng (Metallurgical Engineering)
	BEng (Metallurgical Engineering) ENGAGE
	BEng (Mining Engineering)
	BEng (Mining Engineering) ENGAGE
	BSc (Engineering and Environmental Geology)
	BSc (Geology)
	BSc extended programme - Physical Sciences
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	WTW 158
Contact time	2 tutorials per week, 4 lectures per week

Language of tuition	Module is presented in English
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.