Strength of materials II 211 (SWK 211)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	06
Programmes	BEng (Civil Engineering)
	BEng (Civil Engineering) ENGAGE
Prerequisites	SWK 122
Contact time	1 practical per week, 2 lectures per week, 3 tutorials per week
Language of tuition	Module is presented in English
Department	Civil Engineering
Period of presentation	Semester 1

Module content

Centroids: centroids of lines, surfaces and volumes. Second moment of area, parallel axis theorem, products of inertia, moment of inertia around inclined axes. Fluid statics: resultant forces and their points of application on flat and curve surfaces. Constraints and statical determinacy. Shear forces and bending moments in beams. Deflection of beams: derivation and integration of differential equations. Friction: friction on surfaces, wedges and screws. Vibration: free undamped vibration, free damped vibration, forced undamped vibration, forced damped vibration, natural frequency and resonance. Cables: distributed loads, parabolic and uniform cables.

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