

University of Pretoria Yearbook 2019

Civil engineering measurement techniques 321 (SBZ 321)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	8.00
Programmes	BEng Civil Engineering BEng Civil Engineering Engage
Prerequisites	(SWK 210)
Contact time	1 tutorial per week, 1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Civil Engineering
Period of presentation	Semester 1

Module content

Measurement instruments and measurement techniques used in engineering applications. Theory of the Wheatstone bridge and the application of strain gauges to measurement instruments. Accuracy, precision, resolution, hysteresis and linearity. Mechanical, hydraulic and electrical measurement instruments including load cells, pressure sensors, displacement transducers, vibration sensors, stress cells and inclinometers. Use of Arduino micro controller to read, log and plot sensor data. Elementary site survey and levelling. Coordinate systems and global positioning systems. Civil engineering monitoring programmes including planning, execution, data interpretation and reporting.

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