



University of Pretoria Yearbook 2019

Linear systems 220 (ELI 220)

Qualification Undergraduate

Faculty [Faculty of Engineering, Built Environment and Information Technology](#)

Module credits 16.00

Programmes [BEng Computer Engineering](#)

[BEng Computer Engineering Engage](#)

[BEng Electrical Engineering](#)

[BEng Electrical Engineering Engage](#)

[BEng Electronic Engineering](#)

[BEng Electronic Engineering Engage](#)

Prerequisites EIR 211/221 GS

Contact time 3 lectures per week, 1 practical per week, 1 tutorial per week

Language of tuition Separate classes for Afrikaans and English

Department Electrical, Electronic and Computer Engineering

Period of presentation Semester 2

Module content

Frequency domain analysis of linear time-invariant systems. Laplace, Fourier and Z-transforms applied to periodic, aperiodic and sampled signals; exponential and trigonometric Fourier series. Nyquist sampling theorem, transfer functions, poles and zeros, bandwidth and rise time, frequency response, impulse response, Bode diagrams, natural frequency, natural and forced response. Instability and oscillations. Computer simulation.

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