

University of Pretoria Yearbook 2020

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	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in 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.

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.