

University of Pretoria Yearbook 2019

DSP programming and application 411 (ESP 411)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEng Computer Engineering BEng Computer Engineering Engage BEng Electronic Engineering BEng Electronic Engineering Engage
Prerequisites	ESC 320 GS or EDC 310 GS
Contact time	3 lectures per week, 1 practical per week, 1 tutorial per week
Language of tuition	Module is presented in English
Department	Electrical, Electronic and Computer Engineering
Period of presentation	Semester 1

Module content

Fourier-Transform: revise the Discrete Fourier-Transform (DFT); Fast Fourier-Transform (FFT). Digital filters; cyclic convolution; overlap-and-add as well as overlap-and-save methods; design of FIR- and IIR-filters (incorporating the effect of finite word lengths). Implementation: computer architecture and DSP processors; Mapping of DSP algorithms onto DSP hardware. Projects: simulation (in C) and real-time implementation of selected signal processing algorithms on DSP hardware.

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.