

University of Pretoria Yearbook 2022

Electronic defence - electronic countermeasures 780 (ELB 780)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	32.00
NQF Level	08
Programmes	BEngHons <i>Electronic Engineering</i>
Prerequisites	No prerequisites.
Contact time	10 lectures per week
Language of tuition	Module is presented in English
Department	Electrical, Electronic and Computer Engineering
Period of presentation	Semester 1 or Semester 2

Module content

Radar, including aspects such as: radar frequency bands and their characteristics, radar types (eg tracking vs search radar), the radar range equation, radar cross-section (RCS), target characteristics such as scintillation and glint, pulse compression, coherent and non-coherent integration (eg Doppler processing), range and Doppler ambiguities, target tracking including simple tracking filters and angle-tracking techniques (eg monopulse), high range-resolution (HRR) techniques, and environmental effects such as atmospheric attenuation and multipath. Electronic attack (EA) - also referred to as jamming or electronic countermeasure (ECM) - including the relationship between good system design and EP, and basic EP techniques to counter the EA techniques listed above.

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