

University of Pretoria Yearbook 2022

e-Business and network security 410 (EHN 410)

Qualification Undergraduate

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

Module credits 16.00

NQF Level 08

Programmes [BEng \(Computer Engineering\)](#)

[BEng \(Computer Engineering\) ENGAGE](#)

Prerequisites No prerequisites.

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 1

Module content

The overall objectives of the module are to address the fundamental issues of (i) threats to the security of a system, posed by adversaries and malicious parties, (ii) the services required by users of a secure system, and (iii) the mechanisms to counter these threats. More specifically, this module covers computer and network security concepts, number theory, block cyphers and the data encryption standard, finite fields, advanced encryption standard, block cypher operation, random bit generation and stream cyphers, public-key cryptography and RSA, cryptographic hash functions, message authentication codes, digital signatures, key management and distribution, user authentication, network access control and cloud security, transport-level security, wireless network security, electronic mail security, and IP security.

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