



University of Pretoria Yearbook 2022

Formal aspects of computing (I) 740 (COS 740)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	15.00
NQF Level	08
Programmes	BSchHons Computer Science
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Computer Science
Period of presentation	Semester 1 or Semester 2

Module content

This module focuses on formally specifying systems by means of Event-B. In this formalism, complex systems are specified as abstract machines which are characterised mainly by pre-conditions and post-conditions. From initially highly abstract machines, for which only very few features are stipulated, the module proceeds to more concrete machines which are richer in the details of their features. Such a "refinement", which eventually approaches a form that is almost implementable, is acceptable if it is logically consistent with the abstract machine with which the entire formal modelling process had started. Already available proof tools (for example: Rodin, or Pro-B) will be applied practically in order to demonstrate the validity of those refinement relations.

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