University of Pretoria Yearbook 2022

Simulation modelling 780 (BUY 780)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	32.00
NQF Level	08
Programmes	BEngHons *Industrial Engineering*
	BScHons (Applied Science) *Industrial Systems*
Prerequisites	BAN 313 or BAN 780
Contact time	36 contact hours per semester
Language of tuition	Module is presented in English
Department	Industrial and Systems Engineering
Period of presentation	Semester 1 or Semester 2

Module content

In recent years the boundaries between different simulation paradigms such as discrete event simulation, system dynamics and agent-based models have become less distinct. Improvements in computational efficiency also allow much richer and complex models to be built. This course introduces agent-based models (ABM) as a class of computational models that deal with autonomous agents and their interactions with other agents, and their surrounding environments. Course content covers basic theoretical foundations of ABM and then focuses on a few specific application areas where ABM is used for decision-making: pedestrian and transport models; production and logistics; as well as biology.