

# University of Pretoria Yearbook 2021

## Simulation modelling 780 (BUY 780)

<b>Qualification</b>	Postgraduate
<b>Faculty</b>	<a href="#">Faculty of Engineering, Built Environment and Information Technology</a>
<b>Module credits</b>	32.00
<b>NQF Level</b>	08
<b>Programmes</b>	<a href="#">BEngHons Industrial Engineering</a> <a href="#">BScHons Applied Science Industrial Systems</a>
<b>Prerequisites</b>	BAN 313 or BAN 780
<b>Contact time</b>	36 contact hours per semester
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Industrial and Systems Engineering
<b>Period of presentation</b>	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.

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