University of Pretoria Yearbook 2017

Solution algorithms in operations research 780 (BAR 780)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	32.00
Programmes	BEngHons Industrial Engineering
	BScHons Applied Science Industrial Systems
Prerequisites	BAN 313 or BAN 780
Contact time	48 Contact hours
Language of tuition	Module is presented in English
Academic organisation	Industrial and Systems Eng
Period of presentation	Semester 1 or Semester 2

Module content

When developing decision-support models using optimisation, the computational burden is often so great that exact optimal solutions are not attainable, or not efficiently found, especially in combinatorial and discrete optimisation problems. Often approximate solutions are adequate and can provide superior solutions to the current state-of-practice decision approaches. The module introduces a selection of heuristics and metaheuristics applied to a variety of problems frequently faced by Industrial Engineers. The module also introduces a methodology to test and validate heuristics to ensure robust and reliable application.