

University of Pretoria Yearbook 2020

Operations research 780 (BOZ 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 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

Building on undergraduate modules in Operations Research, the module aims to extend the mathematical programming and optimisation capabilities by introducing uncertainty. Many decision makers are confronted with complex environments in which data is not known with certainty, or in which the decision constraints are uncertain. For cases where one knows the shape, or can assume that the uncertainty follows a known probabilistic distribution, stochastic programming can be used. In the module both chance-constrained programming and fixed recourse are introduced. Fuzzy optimisation is introduced for cases where the shape and/or distribution of the uncertainty are not known. The module also addresses the uncertainty when a decision maker is confronted with multiple, competing objectives.

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