

University of Pretoria Yearbook 2021

Operations research 780 (BOZ 780)

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| 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

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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