

# University of Pretoria Yearbook 2017

## Inventory modelling 780 (BEE 780)

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| <b>Qualification</b>          | Postgraduate   |
| <b>Faculty</b>                | <a href="#">Faculty of Engineering, Built Environment and Information Technology</a> |
| <b>Module credits</b>         | 16.00  |
| <b>Prerequisites</b>          | No prerequisites.  |
| <b>Contact time</b>           | 24 contact hours   |
| <b>Language of tuition</b>    | Module is presented in English   |
| <b>Academic organisation</b>  | Industrial and Systems Eng   |
| <b>Period of presentation</b> | Semester 1 or Semester 2   |

### Module content

- Theory of Inventory Systems:  
Inventory models and modelling including time and certainty complexities, linear and non-linear systems and feedback systems
- Review of inventory models:  
Types and representations (classic, shortage, capacity constraint, time value of money, deterioration, time varying, stochastic inputs, imperfect quality, integrated scheduling and lot sizing models, service systems and retrieval queues)
- Review of important inventory papers, their approaches and their foci:
- Modelling and Solution techniques:  
Characterisation and assumptions  
Mathematical Modelling, Mathematical Programming, Heuristics, Simulation Models, Control Theory and other approaches
- State of the art of modelling:  
Current challenges and research trends
- Technological solutions of inventory modelling and management:  
Algorithms and software, integration to MRP, ERP and scheduling modules, integration to WMS modules, and demonstrations

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