

# Study in the field of OPERATIONS RESEARCH

## Interested in GOOD DECISION MAKING?



- Enjoy Mathematics, but are looking for practical applications thereof?
- Ever wondered, while standing in a long queue, if there isn't a better way?
- Wondering if food waste can't be reduced by changing inventory levels?
- Thinking about an optimal schedule for Super Rugby?
- Wondering how you could improve aspects of a business by looking at the data and numbers?
- Thinking about the best composition of your investment portfolio?

## Study

Undergraduate BCom (Mathematical Science) or BSc (Mathematical Science), Focal area: Operations Research

### Operations Research 214 & 244

Techniques to optimise decisions in networks, for example the shortest route through a road network, the number of flights on each route for an airline (network flow), the design of a water pipe infrastructure for a new suburb. Mathematical modelling of systems via linear programming for better decision making.

2 Year

*Complimentary subjects: Mathematics 214 & 244, Mathematical Statistics 214, 245 & 246, Computer Science 214 & 244, or Applied Mathematics 214 & 244 (if BSc)*

### Operations Research 314, 326, 344 & 354

Mathematical modelling of the more complex integer type systems, for example optimal scheduling of sport tournaments, or nonlinear type systems, for example finding optimal investment portfolios, as well as preference modelling. Some additional techniques such as decision analysis for improved decision making, inventory control to determine the right amount and types of inventory a retailer should keep to maximise their sales, forecasting to help management better prepare for what might happen, queuing theory to improve long waiting times in queues, etc.

3 Year

*Complimentary subjects: Financial Mathematics 378, Mathematical Statistics 312, 316, 344, 354 & 364, Computer Science 314, 315, 334, 344, 354 or 364, Project Management 314, or Applied Mathematics 314, 324, 354 & 364*

## Focus

Postgraduate degrees: **BComHons** & **MCom** Operations Research / **BSc Hons** & **MSc** Operations Research

The Science  
of Better

### Choice between BCom and BSc:

1. **BCom**: will typically take economics and business management as additional subjects for a scientific business career.
2. **BSc**: will typically take computer science and physics as additional subjects for a scientific research and development career.

## Career

Consultant, analyst, researcher

**Business intelligence, consulting, advanced analytics:** Business Modelling Associates, McKinsey & Company, PBT Group, OpSI, Pivot Sciences, Xtranda, Spatial Edge.

**Retail:** Takealot, PEP, Shoprite, Pick a Pay

**Banks:** Capitec Bank, Rand Merchant Bank, First National Bank, Commonwealth Bank

**Researcher / lecturer:** Universities (local / abroad), CSIR

**Other exciting alternative industries:** PIC Solutions, WiGroup, Broadreach, Sasol, RCS Group, DXC Technology, f(x) Software Development

Potential employers



TRUWORTHS



Talk to us

EMAIL:  
Prof. Stephan Visagie  
svisagie@sun.ac.za

WEB:  
Department of Logistics  
www.sun.ac.za/english/faculty/economy/logistics/