

# NATIONAL DIPLOMA: OPERATIONS MANAGEMENT

Qualification code: NDOS04 - NQF Level 6

Campus where offered: Pretoria Campus (day classes for the first two years and evening classes for the third year)

Last year of new intake: 2018

Teach-out (phase-out) date: 31 December 2023

Students registered for this qualification should complete their studies according to the teach-out date prescribed for the qualification, subject to the stipulations of Regulation 3.1.11 and 3.1.13 in the Students' Rules and Regulations.

Information on phased-out programmes can be obtained from the TUT website, [www.tut.ac.za](http://www.tut.ac.za).

Key to asterisks:

\* Information does not correspond to information in Report 151.  
(Deviations approved by the Senate in August 2005.)

## CURRICULUM

Consult the 2018 Faculty Prospectus for the full contents of the qualification.

### FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPO100T	Financial Principles in Operations Management I	(0,186)*	
OEF150T	Organisational Effectiveness I	(0,250)	
ORM100T	Operations Management I	(0,250)	
OTE100T	Operations Management Techniques I	(0,250)	
TOTAL CREDITS FOR THE FIRST YEAR:		<b>0,936</b>	

### SECOND YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
MPP100T	Management Principles and Practice I	(0,188)	
OEF240T	Organisational Effectiveness II	(0,250)	Organisational Effectiveness I
ORM200T	Operations Management II	(0,250)	Operations Management I
OTE200T	Operations Management Techniques II	(0,250)	Operations Management Techniques I
WPD100T	Workplace Dynamics I	(0,188)	
TOTAL CREDITS FOR THE SECOND YEAR:		<b>1,126</b>	

### THIRD YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
OEF320T	Organisational Effectiveness III	(0,188)	Organisational Effectiveness II
ORM300T	Operations Management III	(0,250)	Operations Management II
OTE300T	Operations Management Techniques III	(0,250)	Operations Management Techniques II

### FIRST AND SECOND SEMESTER

OMA10AT	Operations Management Practice IA	(0,125)	
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OMA10BT Operations Management Practice IB (0,125)

TOTAL CREDITS FOR THE THIRD YEAR: 0,938

TOTAL CREDITS FOR THE QUALIFICATION: 3,000

## SUBJECT INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular subject. At time of publication, the syllabus content was defined as follows:

### F

**FINANCIAL PRINCIPLES IN OPERATIONS MANAGEMENT I (FPO100T) 1 X 3-HOUR PAPER**  
*(Subject custodian: Department of Finance and Investment)*

Elements of cost, methods of costing and costing systems, financial aspects of a purchase procedure and stores procedure, basic concepts of cash flow, elements of overhead costs, financial aspects of budgeting, budgetary control, basic concepts of financing projects. Elements of cost, methods of costing and costing systems, financial aspects of a purchase procedure and stores procedure, basic concepts of cash flow, elements of overhead costs, financial aspects of budgeting, budgetary control, basic concepts of financing projects. (Total tuition time: not available)

### M

**MANAGEMENT PRINCIPLES AND PRACTICE I (MPP100T) 1 X 3-HOUR PAPER**  
*(Subject custodian: Department of Management and Entrepreneurship)*

Dynamics of the organisation, motivation, management and leadership styles, management by objectives and communication. Decision making and problem solving, creativity, operational research, industrial relations, and the systems approach to organisations. (Total tuition time: not available)

### O

**OPERATIONS MANAGEMENT I (ORM100T) 1 X 3-HOUR PAPER**  
*(Subject custodian: Department of Operations Management)*

Introduction to production management. Production management in perspective. The nature of operating systems and operations management. Product and service design. Facility planning and layout. Capacity management. Introduction to quality. (Total tuition time: ± 96 hours)

**OPERATIONS MANAGEMENT II (ORM200T) 1 X 3-HOUR PAPER**  
*(Subject custodian: Department of Operations Management)*

Introduction to production management, task and strategic importance of operational management, operational management systems, application of operational management to services, work study and quality, distribution and maintenance. Material requirements planning. Operations scheduling. Quality techniques. Just-in-time production. (Total tuition time: ± 96 hours)

**OPERATIONS MANAGEMENT III (ORM300T) 1 X 3-HOUR PAPER**  
*(Subject custodian: Department of Operations Management)*

Project management. Total quality management. Maintenance management. Theory of constraints. (Total tuition time: ± 96 hours)

**OPERATIONS MANAGEMENT PRACTICE IA (OMA10AT)**

**WORK-INTEGRATED LEARNING**

**OPERATIONS MANAGEMENT PRACTICE IB (OMA10BT)**

**WORK-INTEGRATED LEARNING**

*(Subject custodian: Department of Operations Management)*

Industry-related training as determined by the industry and the University. (No formal tuition)



**OPERATIONS MANAGEMENT TECHNIQUES I (OTE100T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Mathematics and Statistics)**

Introduction to statistics and sampling methods, organisation and description of data using tables and graphs, measures of location and dispersion, basic probability, probability distributions (binomial, poisson, normal), introduction to sampling distributions (means and proportions), confidence intervals, hypothesis testing, Chi-squared tests, regression and correlation analysis, time series analysis, index numbers, elementary interest calculations. (Total tuition time: ± 100 hours)

**OPERATIONS MANAGEMENT TECHNIQUES II (OTE200T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Operations Management)**

Fundamentals of decision theory. Decision trees and utility theory. Marginal analysis and the normal distribution. Game theory. Introduction to linear programming (LP) problems. Formulation of LP problems. Graphic solution of LP problems. Simplex method. Transportation and assignment. Network analysis. Queuing theory. (Total tuition time: ± 96 hours)

**OPERATIONS MANAGEMENT TECHNIQUES III (OTE300T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Operations Management)**

Linear programming: advanced applications and sensitivity analysis. Duality and integer programming. Goal programming and dynamic programming. Simulation. Markov analysis, matrix algebra, linear algebra, ad-vanced game theory and advanced queuing theory. The students are also exposed to the use of POM-QM and Excel-solver software in solving various manufacturing and service operation problems in the departmental laboratory. (Total tuition time: ± 160 hours)

**ORGANISATIONAL EFFECTIVENESS I (OEF150T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Operations Management)**

An introduction to the concepts of productivity and work study is given as well as why work study is a valuable tool to management. Method study is presented in detail according to the SREDEDIM steps. Various methods of recording information are discussed and practiced via case studies. The questioning technique is used to design the proposed procedure and workplace layout. After the proposed procedure and workplace layout is designed, time studies, as one of the work quantification techniques, are taught to enable the student to measure the time for the proposed procedure. The student is taught to determine a standard time for procedures and processes. This enables the student to determine savings in terms of time and cost. (Total tuition time: ± 96 hours)

**ORGANISATIONAL EFFECTIVENESS II (OEF240T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Operations Management)**

Work quantification techniques such as activity sampling, predetermined motion time systems, standard data, and self-recording techniques form part of this subject. Productivity improvement, the implementation of Incentive schemes and planning and control is discussed. The student will be able to calculate different performance ratios and the Objective Matrix as a tool to improve performance is highlighted. (Total tuition time: ± 96 hours)

**ORGANISATIONAL EFFECTIVENESS III (OEF320T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Operations Management)**

The role and place of management services, management services as a consultancy service, the use of computers in management services, ergonomics, related techniques to management services. Organisation goals and objectives, organisation structure and systems, approach to an organisation's functional analysis, new forms of work organisation and job design, remuneration. (Total tuition time: ± 96 hours)

**W****WORKPLACE DYNAMICS I (WPD100T)****1 X 3-HOUR PAPER****(Subject custodian: Department of People Management and Development)**

Human and group behaviour, negotiating skills, legal aspects, performance expectations and reward systems in the production environment. (Total tuition time: ± 96 hours)

