

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT  
SCHOOL OF MECHANICAL AND INDUSTRIAL ENGINEERING  
FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT



UNIVERSITY  
OF  
JOHANNESBURG

# Short Learning Programmes (SLPs)



**The Future  
Reimagined**

# SHORT LEARNING PROGRAMMES (SLPs)

## OUR VISION

The Department of Quality and Operations Management is an academic department within the Faculty of Engineering and Built Environment at the University of Johannesburg. It consists of highly professional individuals delivering exceptional programmes and services, resulting in top achievers and satisfying customer and stakeholders' needs.

## COURSES OFFERED

- **Operations Management**
- **Project Management**
- **Advanced Project Management**
- **Operational Excellence in the 4th Industrial Revolution**
- **Advanced Technology Systems in Quality Management 4.0**

## COURSE DURATION

Saturday classes duration = 3 months

## ATTENDANCE

Classes will run on Saturdays from 08:00 – 16:00

Attendance is compulsory.

[www.uj.ac.za/febe](http://www.uj.ac.za/febe)

# OPERATIONS MANAGEMENT

## (Certificate)

This programme reflects the need of operations managers in the services and manufacturing industry sector, both now and in the future and is intended for operations managers that will include working as an operations manager involving and optimising limited resources to achieve the desired throughput, productivity, quality, utilisation and efficient application of resources through a business process.

### ENTRY REQUIREMENTS

Grade 12 or equivalent qualification AND NQF level 5 qualification or equivalent or working in an operational environment.

### COURSE CONTENT

- The role and scope of the function of production of good and services in profit or non-profit organisations.
- Motivate the responsibility of operations / project manager.
- To develop and implement product strategy that meets the demand of the market.
- Apply suitable forecasting techniques to facilitate decision-making.
- Planning capacity for a given production system.
- Forecasted demand.
- Short term scheduling and aggregate planning.
- Capacity planning.
- Integrated management methodology.

### CAREER OPPORTUNITIES

The purpose of this module is to provide the students with the skills and knowledge in operations management. It is aimed at managers and potential managers who must understand and apply operations management principles and strategies within an operations environment.

# PROJECT MANAGEMENT (Certificate)

The purpose of the SLP in Project Management is to provide “would be” project managers and project team leaders, (in the Operations and Quality management discipline), with pragmatic understanding of project management competencies and methodologies. The students graduating from this SLP should be able to apply project management tools, techniques and principles; coordinate, manage and execute operational projects within the stated scope, quality standards, cost and time in order to achieve the required deliverables in an operations or quality driven environment.

## ENTRY REQUIREMENTS

Grade 12 or equivalent qualification AND NQF level 5 qualification or equivalent or working in an operational or project management environment.

## COURSE CONTENT

- Introduction to Project Management (PM) and nature of Projects in Operations and Quality Management.
- Integration of PM and OM knowledge areas.
- Planning, Scheduling, and Control of operational projects in both service and manufacturing companies.
- Organising for Project work.
- Project life cycle, selection and initiation in Operations and Quality Management.
- Project scope and change management in Operations and Quality Management.
- Stakeholder Management in Operations and Quality Management.
- Project execution in Operations and Quality Management.
- Communication and Team dynamics in Project.
- Application of Industry 4.0 and beyond in Operational Projects.
- Software application in operational projects.
- Application of Quality improvement tools, Lean and Six-Sigma in Operations and Quality Management.
- Project closure in Operations and Quality Management.

## CAREER OPPORTUNITIES

The programme is aimed at candidates whom will be involved in implementation, managing and leading projects in their respective working environments. Candidates will acquire the knowledge through Project Management and be able to plan, organise and execute projects.

# ADVANCED PROJECT MANAGEMENT (Certificate)

The purpose of the Advanced Project Management is to provide relevant, advanced project management knowledge for the practicing project leader or manager pursuing a career in project management. While the programme focuses on the attainment of advanced of project management skills, learning will more holistically focus on how to integrate various projects to enhance a company's strategic intent.

## ENTRY REQUIREMENTS

Grade 12 or equivalent qualification AND NQF level 5 qualification or equivalent or at least 2 years working in an project management environment.

## COURSE CONTENT

- Integrated and structured project management.
- Development of a business project Appraisal within a Quality and/or Operations Management environment.
- Development of Incubation business project within a Quality and/or Operations Management environment.
- Technology in Project Management.
- Industry 4.0 Overview.
- Transformation of Project Management in industry 4.0.
- Project Management in industry 4.0 within a Quality and/or Operations Management environment.
- Digitisation in Project Management.
- Project Organisation.
- Planning and Scheduling Processes of planning and control.
- The Structured Approach to Planning and Control The functions of structuring.
- Work breakdown structure (WBS).

## CAREER OPPORTUNITIES

This programme is aimed at senior managers who as project leaders, or would be project leaders or project team members must understand and apply advance project management principles which will include functional manger and upper level executives.

# OPERATIONAL EXCELLENCE in the 4th Industrial Revolution

The purpose of the SLP, in Operational Excellence in the 4th Industrial Revolution, is to provide the broader understanding of operational excellence and the digital transformation tools and techniques associated with Industry 4.0 to operations managers or professionals. Moreover, seeks to encourage the need for the adoption of these tools and techniques that would assist managers/specialists to grow operational excellence through practical demonstration of 4IR tools, concepts and methodologies. Participants will be equipped with the required knowledge, tool, approaches, and experiences to implement the new concepts of Industry 4.0. This would therefore bridge the gap between the current traditional systems in operations management and the new era of smart systems. This could therefore improve the enterprise's performance thereby growing the economy

## ENTRY REQUIREMENTS

Minimum entry is a Grade 12 certificate or minimum of two years working experience in managerial/specialist position.

## COURSE CONTENT

- **Introduction to Internet of Things (IoT)**  
The section highlights the importance of IoT within an organisation and justifies the need for the IoT in the field of operations management.
- **Business Intelligence and Analytic tools (BIA)**  
This section covers the fundamentals of BIA and the tools and techniques related to the application of BIA in the operations management environment.
- **Machine learning (Incorporating applications of Data Mining)**  
The section covers the practical application of machine learning through the use of data mining technique in relation to operations management.
- **Decision Support Systems (DSSs)**  
This section explains the significance of DSSs that pertain to knowledge management and decision making processes in operations management.

# ADVANCED TECHNOLOGY SYSTEMS in Quality Management 4.0

The purpose of the SLP Advanced Technology Systems in Quality Management 4.0, is to provide managers/specialist or professionals in the Quality Management field with in-depth knowledge and application of the various advanced and emerging technological systems in Quality Management 4.0. The SLP will equip the student with the required knowledge, tools, methodologies and applications to implement the new concepts of Quality 4.0 to bridge the gap between archaic legacy systems and tools and the new era of systems thinking.

The SLP contributes to improve the technical qualities of the participants by capacitating them with practically oriented value that benefits the needs of present-day industry. In this case, the SLP would contribute to the specific needs of the evolving workplace, thereby building on industry improvements and business growth.

## ENTRY REQUIREMENTS

Minimum entry is Grade 12 or minimum of two years of relevant working experience in a managerial/specialist position.

## COURSE CONTENT

- **Introduction to Quality Management**  
This is the introduction to different quality concepts, theories and principles and their application guidelines with reference to organisational benefits as demonstrated by Quality gurus.
- **Introduction to Quality 4.0**  
This introduces how people, processes and technology come together to create impact in the digital age. Quality 4.0 mainly refers digitalisation of quality through the application of legacy and Industry 4.0 technologies to advance and better evaluate quality improvements.
- **Quality Analytics**  
Here the integration of quality, big data and analytics takes place, whereby concepts are aimed at unleashing new streams of customer value and competitive positioning. The collection, analysis and utilization of quality data enables improvements in quality decision making.

- **Introduction to Scientific Data Management**

This is the introduction of broader fundamentals of data sciences which expand the concepts of data management from acquiring physical data, validating data, mining and processing data, analysing data and exploiting data to inform business direction at competitive paces which industry demands.

- **Manufacturing and Service Technologies**

These are advanced quality tools, techniques, processes, machinery and integrated approaches that are focused on improvement of manufacturing and service institutions, thereby increase efficiencies and experience.

- **Workplace Behaviour Analysis**

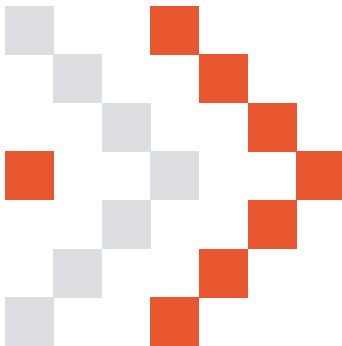
This encompasses the exploration and development of innovative tools, technologies and automated processes for gathering data, observing workplace behavioural patterns and design of quality solutions for the industry.

- **Connectivity and Collaboration**

This is where quality tools, techniques and systems are connected to 4.0 technologies and meaningful results are achieved through collaboration.

## APPLICATION PROCESS

If you are interested in any of the mentioned Short Learning Programmes, please contact Ms Maggy Ngolwane. You will receive dates, prices, application forms and relevant information regarding the courses.



### CONTACT

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