



# Executive Summary

Qualification	National Certificate: Information Technology (Systems Development)
Qualification ID	48872
NQF Level	5
Minimum Credits	131
Duration	12 to 24 months
Field	Physical, Mathematical, Computer and Life Sciences
Subfield	Information Technology and Computer Sciences
ETQA	MICT SETA
Purpose	The purpose of this qualification is to enhance readiness and provide entry into the areas of Systems Development at NQF Level 6. It prepares learners for entry into the workplace or as undergraduate study in the Systems Development areas covered, providing them with the necessary knowledge needed for further study in the fields of Information Technology and Computer Sciences at Higher Education level.

## Entry Requirements

- Communication at NQF Level 4
- Mathematical Literacy at NQF Level 4
- Computer Studies an advantage



EMPOWERED

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## Exit Level Outcomes

- Communicate effectively with fellow IT staff and users of information systems
- Understand the role of technology in the business context.
- Demonstrate an understanding of problem-solving techniques, and how to apply them in a systems development environment
- Demonstrate an understanding of Systems Development, with all its implications
- Relate business problems and information technology solutions
- Apply the principles of creating computer software

## The KLM Empowered X-Perience



### X-Ploration

For each of the SIX integrated learning blocks, learners explore content on their own before engaging with others. Guided by self-study plans and diagnostic self-assessment, they formulate their own insights to share.



### X-Change

Learners attend facilitator-led sessions, either in class or online, to share their learning and refine their skills in a safe environment. Collaborative activities and peer feedback build learning synergy and allow learners to master specific skills.

### X-Tension

Workplace application assignments allow learners to put their new learning to use on the job. Under the guidance of mentors, and with access to performance and wellness support, learners hone their skills and add value.



### X-Cellence

Each learner's progress is measured against learning outcomes through formative and summative assessment. Final examinations and presentations are used to obtain an accurate picture of overall understanding and mastery of the content.

### X-Citement

Learners receive a welcome letter and an X-Perience Map detailing the flow of their qualification. An orientation session helps them to understand the benefits and career options linked to the qualification.



# Learning Blocks

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## Communication Skills

ID	Unit Standard Title	Level	Credits
116389	Write a technical report	4	4
115431	Analyse feedback contexts and apply constructive feedback techniques	5	3
114051	Conduct a technical practitioners meeting	5	4
13925	Present information in a public setting	5	5
Total			16

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## Personal Development

ID	Unit Standard Title	Level	Credits
114076	Use computer technology to research a computer topic	4	3
114055	Demonstrate an awareness of ethics and professionalism for the computer industry in South Africa	5	3
114059	Demonstrate an understanding of estimating a unit of work and the implications of late delivery	5	5
114050	Explain the principles of business and the role of information technology	5	4
Total			15

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## Database Design

ID	Unit Standard Title	Level	Credits
114048	Create database access for a computer application using structured query language	5	9
114049	Demonstrate an understanding of Computer Database Management Systems	5	7
115373	Demonstrate an understanding of sort and search techniques used in computer programming Sorting algorithms	5	6
Total			22

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## Computer Programming and Problem Solving

ID	Unit Standard Title	Level	Credits
115362	Manage software development source files using appropriate tools	5	5
115365	Apply the principles of designing computer system inputs and outputs	5	7
115388	Produce documentation for a computer program to agreed standards	5	3
115367	Demonstrate logical problem solving and error detection techniques	5	8
115359	Demonstrate an understanding of the handling of error in a computer programming environment	4	2
Total			25

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## Computer Systems Development

ID	Unit Standard Title	Level	Credits
115391	Demonstrate an understanding of the principles of the internet and the world-wide-web	4	3
115358	Apply information gathering techniques for computer system development	5	7
115392	Apply principles of creating computer software by developing a complete programme to meet given business specifications	5	12
115384	Test a computer program against a given specification	5	6
Total			28

## Object Oriented Programming (Java)

ID	Unit Standard Title	Level	Credits
115363	Apply fundamental principles of Object Oriented Programming to solve a given problem	5	10
115378	Demonstrate an understanding of advanced object-oriented programming	6	14
115381	Apply the principles of creating a computer program using an OOP language in a GUI environment	6	12
		Total	

## Procedural Programming

ID	Unit Standard Title	Level	Credits
115386	Apply the principles of creating batch and interactive computer programs using a procedural programming language	5	10
115382	Apply the principles of creating computer programs containing advanced algorithms using a procedural programming language	6	12
115387	Apply the principles of creating a computer program using a procedural programming language in a GUI environment	6	14
		Total	36

## 4th Generation Level Programming (SQL)

ID	Unit Standard Title	Level	Credits
115390	Create an application for a single-user personal computer using a fourth generation language	5	10
114389	Design a computer application for a single-user personal computer for programming with a 4GL	6	12
115360	Demonstrate fourth generation language computer programming skills	5	7
		Total	29

## Multimedia

ID	Unit Standard Title	Level	Credits
115366	Create animation for a multimedia/web-based computer application	5	10
115371	Create digitised sound for a multimedia/web-based computer application	5	10
115370	Create digitised still images for a multimedia/web-based computer application	5	10
115375	Create digitised video for a multimedia/web-based computer application	5	10
115379	Create object scripts for a multimedia/web-based computer application	5	20
115361	Create digitised text for a multimedia/web-based computer application	6	8
		Total	68

## Electronic Commerce

ID	Unit Standard Title	Level	Credits
115383	Demonstrate an understanding of the principles of designing and building an e-Commerce web site	5	10
115385	Demonstrate an understanding of the principles of implementing and managing an e-Commerce web site	5	12
115380	Demonstrate an understanding of the various types of e-commerce applications	5	8
115377	Explain the IT components of an e-Commerce system	5	4
		Total	34

## Web-Site Development

ID	Unit Standard Title	Level	Credits
115372	Demonstrate an understanding of tools and products available for web-site development	5	3
115369	Design and build a web-site using simple HTML	5	5
115368	Apply advanced HTML and associated techniques to build a web site for business applications	5	12
115376	Demonstrate an understanding of the principles of implementing and managing a web server	5	10
115374	Demonstrate an understanding of the use of web-sites in business	5	4
Total			34

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