



# Executive Summary

Qualification	OC Software Engineer
Qualification ID	119458
NQF Level	6
Minimum Credits	240
Duration	18 to 24 Months
Field	Field 10 - Physical, Mathematical, Computer and Life Sciences
Subfield	Information Technology and Computer Sciences
ETQA	MICT SETA
Purpose	The purpose of this qualification is to prepare a learner to function as a Software Engineer. A Software Engineer researches, analyses, and evaluates requirements for existing or new software applications and designs, develops, deploys, tests within scope of work (debugs) and maintains software applications.
Entry Requirements	Any NQF Level 4 qualification



EMPOWERED

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## Exit Level Outcomes

1. Apply knowledge to design software to meet clients' needs.
2. Design and manipulate databases
3. Develop software to add value to the organisation.
4. Test or debug source code.

## 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-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-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.



### 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-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.

## Compulsory Modules

1

### Apply knowledge to design software to meet clients' needs.

ID	Title	Level	Credits
251201-001-00-KM-01	Software Engineering	6	20
251201-001-00-KM-02	Programming	6	20
251201-001-00-PM-01	Document System Design	6	25
251201-001-00-WM-01	Software Design	6	30
Total			95

2

### Design and manipulate databases

ID	Title	Level	Credits
251201-001-00-KM-03	Database Design and Information Systems	6	15
251201-001-00-PM-02	Design and Manipulate Databases	5	5
251201-001-00-WM-02	Database Design and Manipulation	5	20
Total			40

3

### Develop software to add value to the organisation.

ID	Title	Level	Credits
251201-001-00-KM-04	Fundamentals of Project Management in Relation to Software Engineering	5	5
251201-001-00-PM-03	Programme and Deploy Applications	6	25
251201-001-00-WM-03	Software Development	6	30
Total			60

4

### Test or debug source code.

ID	Title	Level	Credits
251201-001-00-KM-05	Digital and Business Mathematics	5	15
251201-001-00-PM-04	Test or Debug Source Code to Ensure Client's needs are met	5	15
251201-001-00-WM-04	Software Testing	5	15
Total			45

## Articulation Options

This qualification provides opportunities for horizontal and vertical articulation options.

### Horizontal Articulation:

- Diploma in Information Technology in Software Development, NQF Level 6.
- Diploma in Information Technology in Web Development, NQF Level 6.
- Diploma in Information Technology Management, NQF Level 6.

### Vertical Articulation:

- Bachelor of Information Technology in Business Systems, NQF Level 7.

## Part Qualification 1: Software Tester (119438)

ID	Title	Level	Credits
251201-001-00-00-KM-01	Software Engineering	6	20
251201-001-00-00-KM-04	Fundamentals of Project Management in relation to Software Engineering	5	5
251201-001-00-00-KM-05	Digital Business Mathematics	5	15
251201-001-00-00-PM-04	Test or debug source code to ensure client's needs are met	5	15
251201-001-00-00-WM-03	Software testing	5	15
Total			70

## Part Qualification 2: Systems Designer

ID	Title	Level	Credits
251201-001-00-00-KM-01	Software Engineering	6	20
251201-001-00-00-KM-02	Programming	6	20
251201-001-00-00-KM-03	Database design and Business Information Systems	6	15
251201-001-00-00-KM-04	Fundamentals of Project Management in relation to Software Engineering	5	5
251201-001-00-00-PM-01	Document system design	6	25
251201-001-00-00-PM-03	Program and deploy applications	6	25
251201-001-00-00-WM-01	Software design,	6	30
251201-001-00-00-WM-03	Software development	6	30
Total			170

## Part Qualification 3: Database Designer

ID	Title	Level	Credits
251201-001-00-00-KM-01	Software Engineering	6	20
251201-001-00-00-KM-02	Programming	6	20
251201-001-00-00-KM-03	Database design and Business Information Systems	6	15
251201-001-00-00-KM-04	Fundamentals of Project Management in relation to Software Engineering	5	5
251201-001-00-00-PM-01	Document system design	6	25
251201-001-00-00-PM-02	Design and Manipulate Databases	5	5
251201-001-00-00-PM-03	Program and deploy applications	6	25
251201-001-00-00-WM-01	Software design,	6	30
251201-001-00-00-WM-02	Database design and manipulation	5	20
251201-001-00-00-WM-03	Software development	6	30
Total			195

## Part Qualification 4: Applications Programmer

ID	Title	Level	Credits
251201-001-00-KM-01	Software Engineering	6	20
251201-001-00-KM-02	Programming	6	20
251201-001-00-KM-03	Database Design and Information Systems	6	15
251201-001-00-KM-04	Fundamentals of Project Management in Relation to Software Engineering	5	5
251201-001-00-KM-05	Digital and Business Mathematics	5	15
251201-001-00-PM-03	Programme and Deploy Applications	6	25
251201-001-00-PM-04	Test or Debug Source Code to Ensure Client's needs are met	5	15
251201-001-00-WM-03	Software Development	6	30
251201-001-00-WM-04	Software Testing	5	15
Total			160

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